DECEMBER 1982 NUMBER 460 -- Part I

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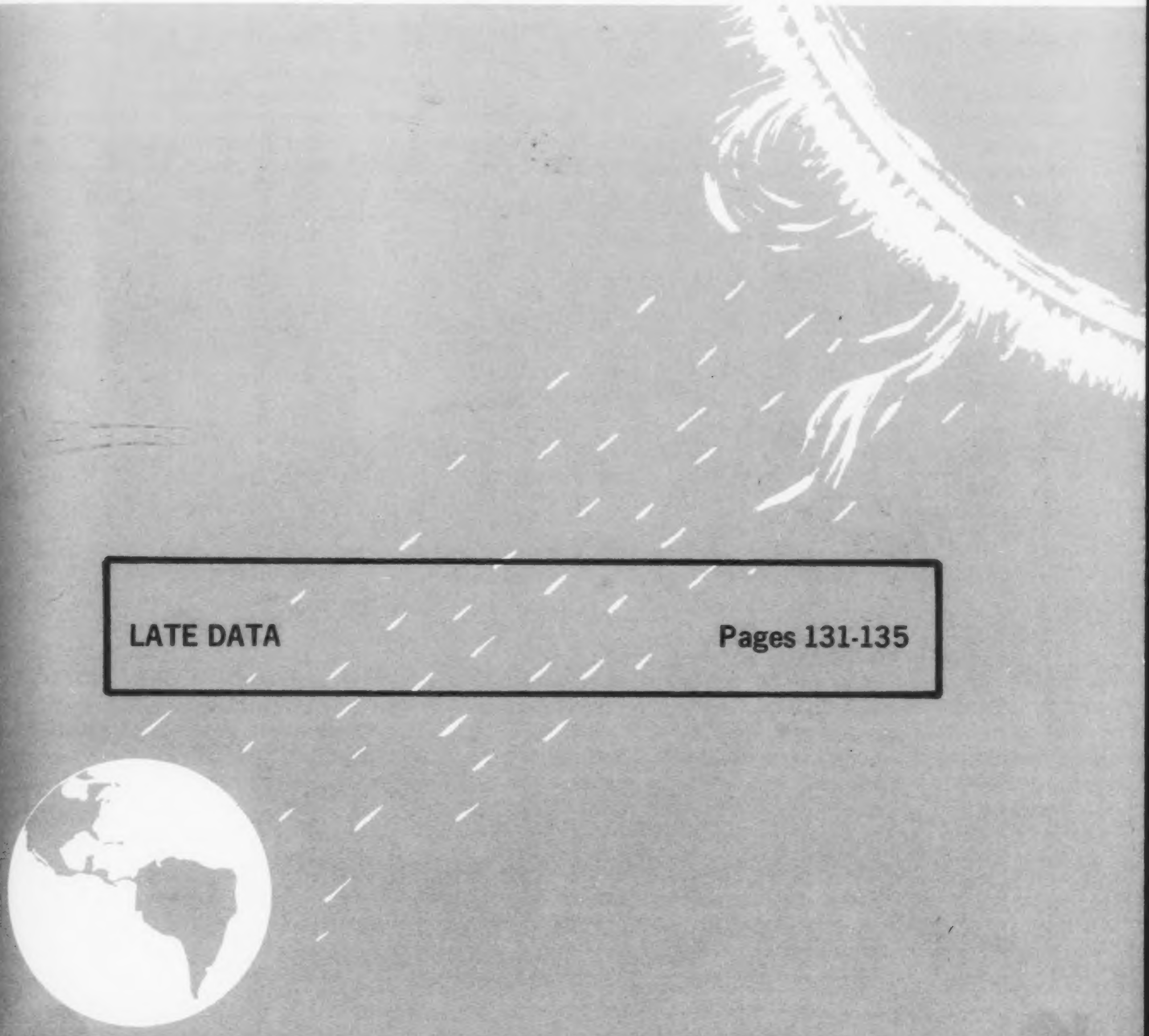
Solar-Geophysical Data prompt reports

DEPARTMENT OF COMMERCE
UNITED STATES OF AMERICA

Data for November 1982, October 1982 & Late Data

Explanation of Data Reports Issued as Number 450 (Supplement) February 1982



LATE DATA **Pages 131-135**

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA AND INFORMATION SERVICE / NATIONAL GEOPHYSICAL DATA CENTER

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Solar - Geophysical Data

NO. 460 DECEMBER 1982

Part I (Prompt Reports)

DATA FOR
NOVEMBER 1982
OCTOBER 1982

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NATIONAL GEOPHYSICAL DATA CENTER
BOULDER, COLORADO

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SOLAR-GEOPHYSICAL DATA

No. 460

Issued in two parts

Helen E. Coffey, Editor

Joe H. Allen, Chief
Solar-Terrestrial Physics Division

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			1981 Nov	Dec	1982 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
A.	SOLAR AND INTERPLANETARY PHENOMENA														
A.1	Sunspot Drawings		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.2aa	International Provisional Relative Sunspot Numbers R_I		448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11
A.2c	American Relative Sunspot Numbers Ra		448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11
A.3a	Mt. Wilson Magnetograms		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.3b	Mt. Wilson Magnetic Characteristics of Sunspots		449A110	450A104	451A120	452A106	453A102	454A104	455A126	457A166	457A112	458A110	459A105	460A 83	
A.3c	Kitt Peak Magnetograms		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.3d	Mean Solar Magnetic Field (Stanford)		448A 44	449A 38	450A 34	451A 50	452A 42	453A 32	454A 32	455A 56	456A 48	457A 42	458A 38	459A 36	460A 44
A.3e	Stanford Magnetograms		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.4	H-alpha Filtergrams		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.5	Calcium Plage Drawings - Mt. Wilson or Big Bear		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	---	---	
A.5a	Calcium Plage (Mt. Wilson or Big Bear) and Sunspot Regions		449A110	450A104	451A120	452A106	453A102	454A104	455A126	457A166	457A112	453A110	---	---	
A.5b	Mt. Wilson or Big Bear Daily Calcium Plage Indices		449A127	450A118	451A135	452A118	453A113	454A117	455A138	457A176	457A122	458A119	---	---	
A.6	H-alpha Synoptic Charts		449A 42	450A 38	451A 54	452A 46	453A 36	454A 36	456A 52	456A 53	457A 46	458A 42	459A 40	460A 47	
A.6b	Synoptic Chart and Active Regions (Paris)		455B 36	455B 37	458B 43	459B 91	460B154	460B155							
A.6c	Stanford Solar Magnetic Field Synoptic Charts		449A 44	450A 39	451A 55	452A 47	453A 37	454A 38	455A 61	456A 55	458A 43	458A 44	460A 48	460A 49	
A.6d	Kitt Peak Solar Magnetic Field Synoptic Charts		449A 47	450A 40	451A 56	452A 48	453A 38	454A 40	455A 62	456A 56	457A 48	458A 45	459A 42	460A 50	
A.6e	Mass Ejections from the Sun		453B 64	454B 35	455B 32	456B 83	457B 73	458B 40	459B 37	460B113					
A.7f	Helium D3 Chromosphere (Big Bear)		448A 40	---	---	---	---	---	---	---	---	---	---	---	---
A.7g	Helium Synoptic Maps (KPNO)		449A 49	---	451A 57	452A 49	45A144	454A 42	455A 63	456A 56	457A 49	458A 47	459A 43	460A 51	
A.7h	Coronal Line Emission (Sac Peak)		449A 50	450A 42	451A 58	452A 50	453A 40	454A 44	455A 64	456A 58	457A 50	458A 48	459A 44	460A 52	
A.8aa	2800 MHz - Daily Values of Solar Flux (ARO-Ottawa)		448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11
A.8ac	2800 MHz - Daily Values of Adj. Solar Flux (ARO-Ottawa)		448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11
A.8g	Daily Values of Adjusted Solar Flux (AFGL)		448A 11	449A 11	450A 11	451A 11	452A 11	453A 11	454A 9	455A 11	456A 9	457A 9	458A 9	459A 9	460A 11
A.10a	169 MHz - Interferometric Observations (Nancay)		448A 25	449A 25	450A 23	452A162	452A 28	455A162	454A 21	455A 30	458A 25		459A 26	460A 28	
A.10c	21 cm East-West Solar Scans (Fleurs)		448A 28	449A 28	450A 26	451A 33	452A 31	---	---	455A 33	456A 30	457A 29	458A 28	459A 28	460A 31
A.10d	43 cm East-West Solar Scans (Fleurs)		448A 29	449A 29	450A 27	451A 34	452A 32	---	---	---	456A 30	457A 30	458A 29	459A 29	460A 32
A.10e	10.7 cm East-West Solar Scans (Ottawa-ARO)		448A 27	449A 27	450A 25	451A 32	452A 30	453A 25	454A 23	455A 32	456A 29	457A 28	458A 27	459A 27	460A 30
A.10f	3 cm East-West Solar Scans (Toyokawa)		448A 26	449A 26	450A 24	451A 31	452A 29	453A 24	454A 22	455A 31	456A 28	457A 27	458A 26		460A 29
A.10g	8 cm East-West Solar Scans (Toyokawa)		---	---	---	---	---	---	---	---	---	---	---	---	---
A.11g	Solar X-ray (SMS/GOES) (graphs)		453B 59	454B 29	455B 26	456B 78	457B 67	458B 35	459B 31						
A.12e	Energetic Solar Particles (IMP H & J)	1980-81													
A.13d	Solar Wind from IPS Measurements		448A 38	451A166	451A169	451A 45	---	---	---	---	---	---	---	---	---
A.13e	Solar Plasma (IMP H & J)		457B123	457B124	457B125	457B126	457B 66	458B 34							
A.13f	Solar Wind (Pioneer 12 (Venus))		448A 41	449A 35	450A 31	451A 51	452A 43	453A 33	454A 33	455A 57	456A 45	457A 39	458A 39	459A 37	---
A.17	Interplanetary Magnetic Field (Pioneer 12)		---	---	452A163	452A123	455A175	455A175	455A142	---	457A129	458A124	459A130		
A.17c	Inferred IP Magnetic Field		448A 42	449A 36	450A 32	451A 48	452A 40	453A 30	454A 30	455A 54	456A 46	457A 40	458A 36	459A 34	460A 42
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B.52	Graphs of Transmission Frequency Range		449A164	450A144	451A162	452A158	453A144	454A140	455A158	456A156	457A162	458A148	459A156	460A128	
B.53	Quality Figures Based on Frequency Ranges		449A166	450A143	451A161	452A160	453A143	454A142	455A157	456A158	457A161	458A150	459A158	460A130	
C.	FLARE-ASSOCIATED EVENTS														
C.1a	Optical Observations Flares		448A 16	449A 16	450A 16	451A 16	452A 16	453A 16	454A 14	455A 16	456A 14	457A 14	458A 14	459A 14	460A 16
C.1ba	Optical Observations Flares (Standardized Data)	1980							457B 76	459B 39	460B116				
C.1d	Flare Patrol Observations		---	449A 24	450A 22	451A 30	452A 27	453A 23	454A 20	455A 29	456A 27	457A 26	458A 24	459A 25	460A 27
C.1d	Flare Patrol Observations	1980							457B115	459B 87	460B151				
C.1e	Flare Indices (by day)	1980							457B114	459B 86	460B150				
C.1f	Flare Indices (by Region)	1980													
C.3	Solar Radio Waves - Outstanding Occurrences		453B 4	454B 4	455B 4	456B 4	457B 4	458B 4	459B 4	460B 4					
	Solar Radio Waves - Fixed Frequencies - Selected		448A 30	449A 30	450A 28	451A 35	452A 33	453A 26	454A 24	455A 34	456A 31	457A 31	458A 30	459A 30	460A 33
C.4a	Solar Radio Spectral Obs. (Fort Davis)		449A132	450A122	451A140	452A124	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	
C.4d	Solar Radio Spectral Obs. (Culgoora)		449A132	450A122	451A140	452A124	455A163	455A170	455A143	456A124	457A130	458A125	459A131	460A106	
C.4e	Solar Radio Spectral Obs. (Weissenau)		449A132	450A122	451A140	452A124	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	
C.4f	Solar Radio Spectral Obs. (Sagamore Hill)		449A132	450A122	451A140	452A124	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	
C.4h	Solar Radio Spectral Obs. (Dwingeloo)		449A132	450A122											
C.4i	Solar Radio Spectral Obs. (Bleien)		---	---	451A140	452A124	454A145								
C.4j	Solar Radio Spectral Obs. (Manila)														
C.4k	Solar Radio Spectral Obs. (Learmonth)		449A132	450A122	451A140	452A124	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	
C.4l	Solar Radio Spectral Obs. (Palehua)		449A132	450A122	451A140	452A124	453A118	454A121	455A143	456A124	457A130	458A125	459A131	460A106	
C.5e	Solar X-ray (SMS/GOES) (graphs)		453B59	454B 29	455B 26	456B 78	457B 67	458B 35	459B 31						
C.6	Sudden Ionospheric Disturbances		449A128	450A119	451A136	452A119	453A114	454A118	455A139	456A118	457A123	458A120	459A126	460A102	
D.	GEOMAGNETIC AND MAGNETOSPHERIC PHENOMENA														
D.1a	Geomagnetic Indices Kp, Kn, Ks, Km, Ap, aa, Cp		449A159	450A138	451A151	452A152	453A136	454A134	455A153	456A149	457A154	459A162	459A150	460A123	
D.1ba	27-day Chart of Kp Indices		449A161	450A140	451A153	452A154	453A138	454A136	455A155	456A151	457A156	458A144	459A152	460A125	
D.1c	27-day Chart of C9		451A158	451A158											
D.1ca	aa graph 1868 - present														
D.1d	Principal Magnetic Storms		449A162	450A141	451A159	452A155	453A141	454A139	455A156	456A154	457A159	458A147	459A153	460A126	
D.1e	Reduced Magnetograms														
D.1f	Sudden Commencement and Solar Flare Effects		449A163	450A142	451A160	452A157	453A142	456A160		456A155	457A160	459A164	459A155	460A127	
D.1g	Equatorial Indices Dst		450A153	451A175	452A165	453A148	453A140	454A138	456A160	456A153	457A158	458A146	460A135		
D.1h	Geomagnetic Substorm Log (Boulder)		448A 45	449A 39	450A 35	451A 52	452A 44	453A 34	454A 34	455A 58	456A 49	457A 43	458A 40	459A 38	460A 41
F.	COSMIC RAYS														
F.1a	Cosmic Ray Neutron Counts (Deep River)		450A149	450A134	451A151	452A151	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	
F.1b	Cosmic Ray Neutron Counts (Climax)		450A149	451A172	454A150	454A150	454A150	454A131	457A176	457A178					
F.1e	Cosmic Ray Neutron Counts (Alert)		450A149	450A134	451A151	452A151	453A135	455A177	455A152	456A148	457A153	459A160	459A149	460A119	
F.1h	Cosmic Ray Neutron Counts (Thule)		449A158	450A134	451A151	452A151	453A135	454A131	455A152	456A148	457A153	458A143	459A149	460A119	
F.1i	Cosmic Ray Neutron Counts (Kiel)		450A149	450A134	451A151	452A151	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	
F.1j	Cosmic Ray Neutron Counts (Tokyo)		450A149	450A134	451A151	452A151	453A135	454A131	457A178	457A178	457A153	458A143	459A149	460A119	
F.1l	Cosmic Ray Neutron Counts (Huancayo)		450A149	451A172	454A150	454A150	454A150	457A176	457A178						
H.	MISCELLANEOUS														
H.60	IUWDS Alert Decisions		448A 4	449A 5	450A 5	451A 5	452A 5	453A 5	454A 4	455A 5	456A 4	457A 4	458A 4	459A 4	460A 5

Notes:

"449A 50" listed under 1981 Nov means that the sunspot drawings for Nov 1981 were contained in Solar-Geophysical Data Number 449 - Part I, beginning on page 50.

A = Part I, B = Part II.

----- = no data available.
blank = data not yet received.

NOVEMBER 1982 DATA

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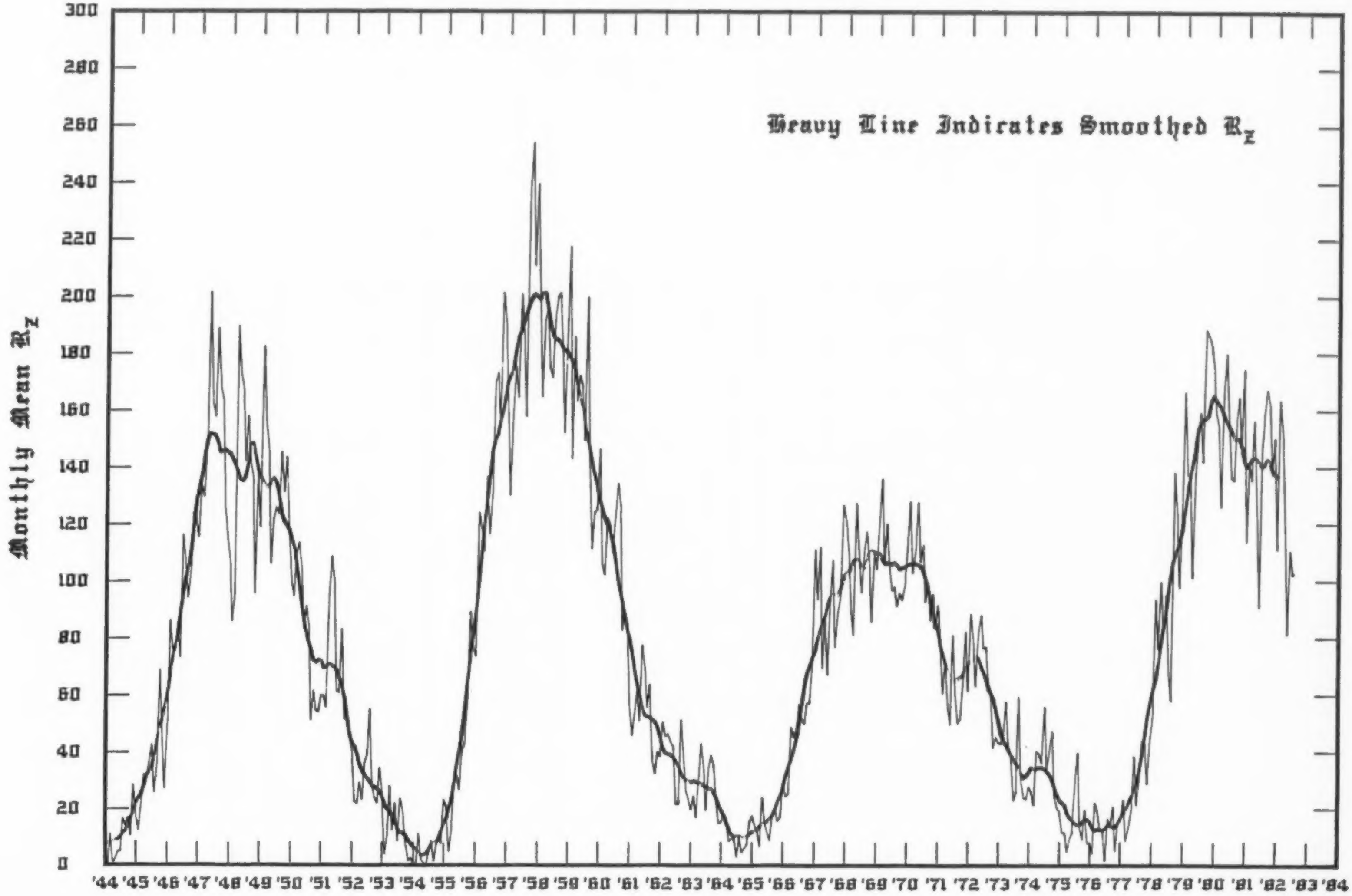
Monthly Mean Zürich Sunspot Numbers
January 1944 – July 1982



ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
NOVEMBER 1982

SUMMARY OF THE GEOALERT MESSAGES

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
305	01	31	118	168	025	N13W84	1	0	0		01	N13W84	Q	SOLQUIET
						N10W58	0	0	0			N10W58	Q	MAGALERT
						S07W53	1	0	0			S07W53	E	01
						N06W25	2	0	0			N06W25	E	
						S10W14	0	0	0			S10W14	Q	
						S24E51	0	0	0			S24E51	Q	
						N21E74	0	0	0			N21E74	Q	
306	02	01	143	162	030	N09W73	0	0	0	PRESTO TENFLARE 100 FLUX	02	N09W73	Q	SOLQUIET
						S08W67	7	0	0	UNITS 01/0332Z DURATION		S08W67	E	MAGNIL
						N06W38	7	0	0	20 MINUTES		N06W38	E	
						S10W31	0	0	0			S10W31	Q	
						S21E34	1	0	0			S21E34	Q	
						N23E65	3	0	0			N23E65	Q	
						N11E72	0	0	0			N11E72	Q	
						N24E75	0	0	0			N24E75	Q	
						N05E80	0	0	0			N05E80	Q	
307	03	02	140	157	028	N09W85	0	0	0		03	N09W85	Q	SOLQUIET
						S08W83	5	0	0			S08W83	E	MAGQUIET
						N06W52	9	0	0			N06W52	E	
						N22W48	1	0	0			N22W48	Q	
						S11W42	1	0	0			S11W42	Q	
						S09W07	0	0	0			S09W07	Q	
						N10E57	0	0	0			N10E57	Q	
						N24E60	0	0	0			N24E60	Q	
						N05E67	0	0	0			N05E67	Q	
308	04	03	122	150	016	N05W65	7	0	0		04	N05W65	E	SOLQUIET
						S12W56	0	0	0			S12W56	Q	MAGQUIET
						S10W20	0	0	0			S10W20	Q	
						S23E09	0	0	0			S23E09	Q	
						N22E34	0	0	0			N22E34	Q	
						N10E44	0	0	0			N10E44	Q	
						N24E48	0	0	0			N24E48	Q	
						N05E54	5	0	0			N05E54	Q	
309	05	04	134	143	008	N06W78	1	0	0		05	N06W78	Q	SOLQUIET
						S11W75	10	0	0			S11W75	Q	MAGQUIET
						S10W33	0	0	0			S10W33	Q	
						S24W04	0	0	0			S24W04	Q	
						N21E22	0	0	0			N21E22	Q	
						N10E33	0	0	0			N10E33	Q	
						N23E34	0	0	0			N23E34	Q	
						N05E41	1	0	0			N05E41	Q	
						N13E72	0	0	0			N13E72	Q	
310	06	05	163	139	008	N07W89	0	0	0		06	N07W89	Q	SOLQUIET
						S11W88	0	0	0			S11W88	E	MAGQUIET
						S10W47	0	0	0			S10W47	Q	
						S22W19	0	0	0			S22W19	Q	
						N21E09	0	0	0			N21E09	Q	
						N10E20	0	0	0			N10E20	Q	
						N22E20	0	0	0			N22E20	Q	
						N05E26	1	0	0			N05E26	E	
						S09E30	0	0	0			S09E30	Q	
						N11E50	0	0	0			N11E50	Q	
						N12E59	0	0	0			N12E59	Q	
						N26E66	0	0	0			N26E66	Q	
311	07	06	152	145	014	S10W60	0	0	0		07	S10W60	Q	SOLQUIET
						S21W33	0	0	0			S21W33	Q	MAGQUIET
						S09W26	0	0	0			S09W26	Q	
						N22W04	0	0	0			N22W04	Q	
						N22E05	2	0	0			N22E05	Q	

ALERT PERIODS
INTERNATIONAL URSIGRAM AND WORLD DAYS SERVICE
SUMMARY OF THE GEOALERT MESSAGES NOVEMBER 1982

NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						N05E15	0	0	0			N05E15	E	
						N23E15	0	0	0			N23E15	Q	
						S09E17	0	0	0			S09E17	Q	
						N11E37	7	0	0			N11E37	E	
						N13E47	1	0	0			N13E47	E	
						N11E53	0	0	0			N11E53	Q	
312	08	07	168	145	006	S09W73	0	0	0		08	S09W73	Q	SOLQUIET
						S10W52	0	0	0			S10W52	Q	MAGALERT
						N21W17	0	0	0			N21W17	Q	08/09
						S11W11	1	0	0			S11W11	Q	
						N22W08	0	0	0			N22W08	Q	
						N11W06	0	0	0			N11W06	Q	
						N23E02	0	0	0			N23E02	Q	
						S08E03	0	0	0			S08E03	Q	
						N11E24	0	0	0			N11E24	E	
						N12E35	2	0	0			N12E35	E	
						N26E39	0	0	0			N26E39	Q	
						S15E80	0	0	0			S15E80	Q	
313	09	08	225	148	012	S10W88	0	0	0		09	S10W88	Q	SOLQUIET
						S09W66	0	0	0			S09W66	Q	MAGNIL
						S14W57	0	0	0			S14W57	Q	
						S21W57	0	0	0			S21W57	Q	
						N21W30	0	0	0			N21W30	Q	
						S12W25	0	0	0			S12W25	Q	
						N23W24	0	0	0			N23W24	Q	
						N12W18	1	0	0			N12W18	Q	
						N23W14	0	0	0			N23W14	Q	
						S08W11	0	0	0			S08W11	Q	
						N12E10	1	0	0			N12E10	E	
						N13E20	1	0	0			N13E20	E	
						N26E25	0	0	0			N26E25	Q	
						N07E54	0	0	0			N07E54	Q	
						S14E66	0	0	0			S14E66	Q	
						S14E78	3	0	0			S14E78	Q	
314	10	09	181	152	008	S22W72	0	0	0		10	S22W72	Q	SOLQUIET
						N21W44	0	0	0			N21W44	Q	MAGQUIET
						S12W39	0	0	0			S12W39	Q	
						N21W28	0	0	0			N21W28	Q	
						S08W25	0	0	0			S08W25	Q	
						N08W11	0	0	0			N08W11	Q	
						N10W03	0	0	0			N10W03	E	
						N12E07	0	0	0			N12E07	E	
						S15E12	0	0	0			S15E12	Q	
						N06E40	0	0	0			N06E40	Q	
						S15E52	0	0	0			S15E52	E	
						S07E64	0	0	0			S07E64	Q	
						S13E71	3	0	0			S13E71	E	
315	11	10	149	156	010	N22W57	0	0	0		11	N22W57	Q	SOLALERT
						S12W54	0	0	0			S12W54	Q	12/XX
						N06W38	0	0	0			N06W38	Q	MAGQUIET
						N09W25	0	0	0			N09W25	Q	
						N10W16	0	0	0			N10W16	Q	
						N12W06	0	0	0			N12W06	Q	
						S16E40	0	0	0			S16E40	E	
						S07E51	1	0	0			S07E51	Q	
						S13E58	6	1	0			S13E58	A	
316	12	11	160	157	015	N22W70	0	0	0		12	N22W70	Q	SOLALERT
						S12W68	0	0	0			S12W68	Q	12/XX
						N23W53	0	0	0			N23W53	Q	MAGQUIET
						N08W37	1	0	0			N08W37	Q	
						N11W30	0	0	0			N11W30	Q	
						N12W19	0	0	0			N12W19	Q	
						S15E26	2	0	0			S15E26	E	
						N08E36	1	0	0			N08E36	Q	
						S07E39	1	0	0			S07E39	Q	

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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S12E44	10	0	0			S12E44	A	
317	13	12	106	168	013	N21W82	0	0	0	PRESTO TENFLARE 550 FLUX	13	N21W82	Q	PROTON
						N12W44	1	0	0	UNITS 12/0539Z DURATION		N12W44	Q	FLARE
						S15E12	0	0	0	23 MINUTES.XRAY EVENT X1/2B		S15E12	E	ALERT
						S07E26	5	0	0	12/1323Z DURATION 106 MIN.		S07E26	E	13/21
						S12E30	14	4	1			S12E30	A	MAGQUIET
318	14	13	155	165	014	N12W58	0	0	0		14	N12W58	Q	PROTON
						N10W40	0	0	0			N10W40	Q	FLARE
						S28W15	0	0	0			S28W15	Q	ALERT
						S14W01	0	0	0			S14W01	E	14/21
						S07E12	1	0	0			S07E12	E	21613
						S13E16	16	4	0			S13E16	A	MAGALERT
						S06E54	1	0	0			S06E54	Q	MINOR
						S13E77	0	0	0			S13E77	Q	14/15
319	15	14	188	163	010	N11W70	1	0	0		15	N11W70	Q	PROTON
						S28W28	0	0	0			S28W28	Q	FLARE
						S15W15	0	0	0			S28W15	Q	ALERT
						N09W06	0	0	0			N09W06	Q	15/21
						S17W03	1	0	0			S17W03	Q	20312
						S09W01	0	0	0			S09W01	Q	MAGALERT
						S12E03	10	1	0			S12E03	A	MINOR
						S07E40	0	0	0			S07E40	Q	15/16
						S19E62	2	0	0			S13E62	Q	
320	16	15	176	161	012	N11W84	3	0	0	PRESTO TENFLARE 537 FLUX	16	N11W84	Q	SOLALERT
						S28W43	0	0	0	UNITS 15/0158Z DURATION		S28W43	Q	16/XX
						S14W28	0	0	0	24 MINUTES		S14W28	Q	MAGNIL
						S15W19	0	0	0			S15W19	Q	
						S07W14	2	0	0			S07W14	Q	
						S12W10	7	2	0			S12W10	A	
						N02W08	0	0	0			N02W08	Q	
						S05E24	0	0	0			S05E24	Q	
						S14E51	3	0	0			S14E51	Q	
321	17	16	129	167	010	S14W40	0	0	0		17	S14W40	Q	SOLALERT
						S15W32	0	0	0			S15W32	Q	17/18
						S07W27	0	0	0			S07W27	Q	MAGQUIET
						S12W23	9	2	0			S12W23	A	
						S14E40	2	0	0			S12E40	Q	
322	18	17	163	162	006	S14W54	1	0	0		18	S14W54	Q	SOLALERT
						S15W45	3	0	0			S15W45	Q	18/XX
						S07W40	0	0	0			S07W40	Q	MAGQUIET
						S12W38	6	1	0			S12W38	A	
						S12E27	2	0	0			S12E27	E	
						S07E78	1	0	0			S07E78	Q	
323	19	18	197	176	012	S15W67	0	0	0		19	S15W67	Q	SOLALERT
						S14W58	1	0	0			S14W58	E	19/21
						S07W54	1	0	0			S07W54	Q	MAGQUIET
						S12W50	2	0	0			S12W50	A	
						S14W24	0	0	0			S14W24	Q	
						S12E14	7	1	0			S12E14	E	
						S08E62	0	0	0			S08E62	Q	
						N11E70	0	0	0			N11E70	Q	
324	20	19	175	187	006	S14W81	0	0	0		20	S14W81	Q	SOLALERT
						S15W73	0	0	0			S15W73	Q	20/XX
						S07W67	0	0	0			S07W67	Q	MAGQUIET
						S12W66	4	0	0			S12W66	A	
						S14W39	0	0	0			S14W39	Q	
						S13W00	10	1	0			S13W00	A	
						S08E49	2	0	0			S08E49	Q	
						N12E60	5	0	0			N12E60	Q	
325	21	20	188	193	005	S07W81	0	0	0		21	S07W81	Q	SOLALERT

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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S12W79	2	0	0			S12W79	E	21/XX
						S14W52	0	0	0			S14W52	Q	MAGQUIET
						S05W43	0	0	0			S05W43	Q	
						S12W15	9	1	0			S12W15	A	
						N10W09	7	0	0			N10W09	Q	
						S08E36	2	0	0			S08E36	E	
						N12E46	1	0	0			N12E46	E	
						S21E74	2	1	0			S21E74	Q	
326	22	21	182	206	019	S15W65	0	0	0		22	S15W65	Q	SOLALERT
						S07W46	0	0	0			S07W46	Q	22/XX
						S11W29	12	2	0			S11W29	A	MAGQUIET
						N11W22	6	0	0			S11W22	Q	
						S08E24	1	0	0			S08E24	Q	
						N12E32	0	0	0			N12E32	Q	
						S24E64	2	0	0			S24E64	Q	
327	23	22	174	222	025	N12W80	1	0	0	PRESTO TENFLARE 12000 FLUX	23	N12W80	Q	SOLALERT
						S08W60	0	0	0	UNITS 1740Z DURATRION IN		S08W60	Q	23/XX
						N17W51	0	0	0	PROGRESS (XRAY EVENT M7/1N		N17W51	Q	MAGQUIET
						S11W43	12	3	0	1828Z DURATION 60 MINUTES		S11W43	A	
						S07E10	0	0	0	TYPE II AND TYPE IV RADIO		S07E10	Q	
						N12E17	1	0	0	EMISSION 1825Z 245 MHZ RADIO		N12E17	Q	
						N12W35	5	0	0	BURST 1300 FLUX UNITS 1740Z)		N12W35	Q	
						S23E49	1	0	0			S23E49	Q	
328	24	23	169	201	024	S05W77	0	0	0	PRESTO MAGSTORM 23/0916Z	24	S05W77	Q	SOLALERT
						N17W65	0	0	0			N17W65	Q	24/XX
						S10W58	4	1	0			S10W58	A	MAGALERT
						N12W50	0	0	0			N12W50	Q	24/25
						S07W04	0	0	0			S07W04	Q	
						N11E04	0	0	0			N11E04	Q	
						S24E35	1	0	0			S24E35	Q	
329	25	24	125	178	035	N18W81	0	0	0	PRESTO MAGSTORM 24/0921Z	25	N18W81	Q	SOLALERT
						S11W72	7	1	0			S11W72	A	25/26
						N12W63	5	0	0			N12W63	Q	MAGALERT
						S07W16	0	0	0			S07W16	Q	MINOR 25
						N12W09	1	0	0			N12W09	Q	MAGALERT
						S23E22	4	0	0			S23E22	Q	MAJOR 26
330	26	25	061	169	038	N13W77	2	0	0	PRESTO TENFLARE 260 FLUX	26	N13W77	Q	SOLALERT
						S07W30	0	0	0	UNITS 25/0414Z DURATION 12		S07W30	Q	26
						N11W22	0	0	0	MINUTES PROTON EVENT BEGAN		N11W22	Q	MAGALERT
						S22E07	3	0	0	25/0800Z MAXIMUM 17 PROTONS		S22E07	Q	MINOR 26
										/CM2/SEC/STER AT GREATER				
										THAN 10 MEV 25/0815Z EVENT				
										ENDED 25/0905Z				
331	27	26	070	173	022	S07W43	0	0	0	PRESTO TENFLARE 2800 FLUX	27	S07W43	Q	SOLNIL
						N11W34	1	0	0	UNITS 0219Z DURATION 50 MIN-		N11W34	Q	MAGNIL 27
						S23W04	3	0	0	UTES PROTON EVENT BEGAN 26/		S23W04	Q	MAGALERT
						S11E71	0	0	0	0625Z MAX 26/1045Z 89 PROTONS		S11E71	Q	28
										/CM2/SEC/STER/AT GREATER THAN				
										10 MEV AND PCA 3DB TENFLARE				
										486 FLUX UNITS 1942Z DURATION				
										11 MINUTES				
332	28	27	113	163	020	S07W56	0	0	0		28	S07W56	Q	SOLQUIET
						N11W48	0	0	0			N11W48	Q	MAGALERT
						S23W15	0	0	0			S23W15	Q	28/29
						S28W08	0	0	0			S28W08	Q	
						S14E43	4	0	0			S14E43	Q	
						S22E58	1	0	0			S14E58	Q	
						S11E60	2	0	0			S11E60	Q	
333	29	28	113	171	023	S07W70	0	0	0	PRESTO SSC 12 GAMMA 28/0026Z	29	S07W70	Q	SOLQUIET
						N11W62	1	0	0			N11W62	Q	MAGALERT
						S24W28	4	0	0			S24W28	Q	29/30
						S28W23	0	0	0			S28W23	Q	

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NO	DI	DO	WOLF	10CM	A	LOC	TOT	M	X	OUTSTANDING EVENTS	DA	LOC	DE	ALERTS
						S14E29	12	0	0			S14E29	E	
						S22E45	0	0	0			S22E45	Q	
334	30	29	127	166	026	S07W83	0	0	0		30	S07W83	Q	SOLQUIET
						N11W74	0	0	0			N11W74	Q	MAGALERT
						S24W42	1	0	0			S24W42	Q	29/30
						S14E16	3	0	0			S14E16	E	
						S23E32	1	0	0			S23E32	Q	
						S10E34	5	0	0			S10E34	E	
						N08E81	1	0	0			N08E81	Q	
335	01	30	120	170	015	S06W95	0	0	0		01	S06W95	Q	SOLQUIET
						N11W89	0	0	0			N11W89	Q	MAGNIL
						S24W57	0	0	0			S24W57	Q	
						S15E02	5	0	0			S15E02	E	
						S11E21	6	0	0			S11E21	E	
						N10E71	1	0	0			N10E71	Q	

ALERT PERIODS
INTERNATIONAL URISIGRAM AND WORLD DAYS SERVICE
NOVEMBER 1982
PRESTO MESSAGES (THE RAPID REPORT OF MAJOR EVENTS)

01 NOVEMBER 1982 TOYOKAWA 01/0525Z TENFLARE 100 FLUX UNITS 01/0332Z DURATION 20 MINUTES
12 NOVEMBER 1982 BOULDER 12/1540Z SOFLARE X1/2B S11E33 12/1323Z DURATION 106 MINUTES
15 NOVEMBER 1982 SYDNEY 15/0215Z TENFLARE 537 FLUX UNITS 15/0158Z MAXIMUM AT 0203Z
15 NOVEMBER 1982 TOYOKAWA 15/0315Z TENFLARE 470 FLUX UNITS 15/0155Z DURATION 40 MINUTES
15 NOVEMBER 1982 BOULDER 15/0324Z TENFLARE 420 FLUX UNITS 15/0158Z DURATION 23 MINUTES
22 NOVEMBER 1982 BOULDER 22/1940Z TENFLARE 12000 FLUX UNITS 22/1741Z IN PROGRESS
24 NOVEMBER 1982 KAKIOKA 24/0200Z MAGSTORM 23/0916Z
25 NOVEMBER 1982 KAKIOKA 25/0100Z MAGSTORM 24/0921Z
25 NOVEMBER 1982 BOULDER 25/0449Z TENFLARE 260 FLUX UNITS 25/0414Z DURATION 12 MINUTES
25 NOVEMBER 1982 TOYOKAWA 25/0512Z TENFLARE 410 FLUX UNITS 25/0414Z DURATION 10 MINUTES
25 NOVEMBER 1982 BOULDER 25/0915Z PROTON EVENT BEGAN 25/0800Z 17 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV PCA 4 DB
26 NOVEMBER 1982 SYDNEY 26/0245Z TENFLARE 1200 FLUX UNITS 26/0219Z CULGOORA 2B S11 W LIMB WITH TYPE IV RADIO EMMISSION 6 TO 8000 MHZ
26 NOVEMBER 1982 TOYOKAWA 26/0345Z TENFLARE 2800 FLUX UNITS 26/0219Z DURATION 50 MINUTES
26 NOVEMBER 1982 BOULDER 26/0345Z TENFLARE 1600 FLUX UNITS 26/0255Z DURATION 12 MINUTES
26 NOVEMBER 1982 BOULDER 26/1200Z PROTON EVENT BEGAN 26/0625Z MAX AT 26/1045Z 89 PROTONS/CM2/SEC/STER AT GREATER THAN 10 MEV PCA 3 DB
26 NOVEMBER 1982 BOULDER 26/2010Z TENFLARE 486 FLUX UNITS 26/1942Z DURATION 11 MINUTES
28 NOVEMBER 1982 SYDNEY 28/0115Z SSC 12 GAMMA 28/0026Z

RELATIVE SUNSPOT NUMBERS
INTERNATIONAL, R_I

	1981 FINAL	1982 FINAL									1982 PROVISIONAL	
DAY	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	193	92	258	168	145	63	70	50	55	115	132	80
2	197	94	241	174	115	57	83	41	68	124	164	88
3	212	112	232	175	151	46	94	33	68	146	143	75
4	212	109	221	177	137	58	104	42	81	176	120	100
5	219	112	219	163	112	63	111	39	97	160	109	100
6	234	86	230	165	117	64	108	32	128	141	55	76
7	244	94	226	146	130	69	115	33	144	117	54	106
8	249	97	232	140	131	89	127	42	150	115	55	82
9	258	98	211	116	132	47	142	61	161	94	54	124
10	253	85	181	122	138	53	147	110	155	81	88	109
11	263	46	158	119	152	58	138	146	157	86	87	112
12	240	52	156	135	142	75	144	187	138	78	92	83
13	185	51	162	155	133	78	139	219	113	81	98	98
14	159	58	142	153	136	58	137	222	100	104	88	116
15	113	81	134	140	127	52	125	246	100	129	71	116
16	66	76	111	156	122	69	128	263	86	133	65	100
17	80	111	120	180	108	76	136	272	93	127	54	108
18	79	139	103	168	91	89	134	270	105	107	39	117
19	74	143	107	167	87	110	134	234	97	117	56	122
20	57	134	119	160	93	112	139	192	77	104	70	118
21	65	134	120	153	91	98	143	138	79	102	91	131
22	75	121	100	146	109	121	146	99	90	95	100	141
23	86	93	97	144	138	107	116	74	71	97	128	120
24	58	70	120	122	145	110	112	27	79	109	145	96
25	62	82	128	152	149	88	92	25	101	118	134	75
26	100	119	136	147	150	117	94	29	98	138	135	73
27	104	125	154	182	126	130	49	22	115	133	131	71
28	136	168	163	179	90	119	36	19	132	132	103	74
29	132	216		169	85	112	32	23	134	144	94	71
30	112	211		162	79	77	38	38	144	160	96	72
31	126	237		132		82		60	120		73	
MEAN	150.1	111.2	163.6	153.8	122.0	82.2	110.4	106.1	107.6	118.8	94.3	98.5

1981 Yearly Mean = 140.4
Zurich R_Z sunspot number replaced by international R_I sunspot number beginning with January 1981 data.
Errata to SGD, 456 Part I, page 8, August issue: mean R_I should be 102.6 and not 026.

DAILY SOLAR FLUX AT 2800 MHz
OTTAWA ARO

FLUX ADJUSTED TO 1 A.U., S_a

	1981	1982										
DAY	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV
1	230.7*	179.9	284.8*	231.3	172.2*	151.7	134.2	106.5	123.4	184.3*	205.2	159.6
2	230.3*	177.2	279.7*	228.3	172.0*	147.4	135.1	106.9	138.2*	168.7*	209.4	154.5
3	238.6	176.1	272.9*	230.1	169.9	147.7	141.5	109.4	153.5*	171.0*	197.0	147.4
4	241.7	170.4	252.8*	238.3*	158.2	144.7	158.2*	111.5	167.3	188.1*	182.3	143.4
5	260.0	165.5	245.2	245.4*	159.9*	148.7	156.6*	114.1	180.9	179.4	163.9	136.4
6	262.1	166.8	245.2	230.0*	165.2	153.0	149.6*	121.3	201.2	172.1	151.9	142.1
7	275.6*	166.9*	239.9	228.3	164.0*	151.0	158.6*	128.2*	219.6	176.8	140.2	142.3
8	287.8	156.9	245.1*	207.1*	162.1*	150.8	167.3	150.3*	217.5*	178.5	136.9	144.8
9	292.4*	164.4	231.7	192.2	167.3*	139.8	177.4	176.6*	212.5	179.2	137.4	147.5
10	278.7	145.7	213.7	178.9*	177.1*	130.7	196.0*	203.5*	209.5	165.6	134.8	152.9
11	266.7*	136.3	211.1*	178.2	178.7*	132.3	224.2	226.4*	205.0*	158.3	137.3	154.1
12	254.2*	132.4	204.0*	181.2	177.5*	132.3	238.3*	239.7*	195.2*	152.5*	136.4	164.9
13	218.9	127.5	194.9*	185.5	170.9	129.8	240.2	252.6*	182.9*	151.3	143.9	161.2
14	193.0	130.5	185.3	201.3	157.9	132.2	240.8	269.2*	176.8	147.4	140.4	159.5
15	172.6	136.3	180.3	207.6*	152.2	132.1	235.8	274.0	173.0	149.0*	134.1	157.0*
16	157.4	146.7	170.5	227.7	148.2	139.0	210.6*	269.4*	161.4	147.3	129.8	163.3
17	144.2	152.6	162.5	230.4	145.9*	142.2*	206.0*	273.3	165.1	147.0*	130.1	158.0
18	136.3*	167.6	165.7	226.8	147.0	146.8	200.7*	247.2*	166.4*	143.2	132.8	170.2*
19	129.7	169.4	170.9*	219.7*	145.1	155.9	207.5	234.7	159.2	142.6*	136.7	182.3
20	133.9	167.0	171.3	217.0	144.2	155.6*	207.1	196.5	144.7	146.9	146.2	189.2
21	142.2	163.3	165.2	212.4	145.2	165.4*	210.7	173.7*	138.6	145.4	161.4	200.9
22	145.9	152.9	163.7	213.7	156.9*	158.8	197.2*	149.5*	138.8	146.2	168.2	231.1*
23	153.0	148.0	173.1	202.4	175.2	155.7*	187.3	128.5	141.2	152.6*	177.3	196.1
24	156.1*	149.1	185.9*	189.0	181.0	144.8*	168.2	117.8	142.9	165.4*	190.9	172.9
25	162.1	169.3*	184.1	189.9	182.6*	145.7	159.1*	108.2	158.5	170.3	196.8	164.8
26	166.2	182.7*	204.0	192.8*	178.3	158.0	142.3	102.1	166.4	187.3	193.5	168.8*
27	176.8	197.2	222.1	195.4*	167.3	171.5*	127.6	97.8	180.4	191.4	187.7	158.6
28	183.0	234.7	224.0	200.6	161.0*	171.3*	123.1	96.4	181.4	196.9	181.4	160.3*
29	183.6	267.0		198.0	155.6	170.9*	111.7	97.5	183.4	204.6	170.9	161.4
30	185.7	284.5		194.5*	149.8*	142.8	108.5	112.4	174.5	202.4	166.7	164.8
31	182.8	289.1		184.1		136.7		114.4	175.0*		165.1	
MEAN	201.4	173.4	208.9	208.3	162.9	147.9	177.4	164.8	172.1	167.1	160.9	163.7

* adjusted for burst
A = interpolated data point

DAILY SOLAR INDICES

NOVEMBER 1982

DAY OF MONTH	YEAR DAY	BARTELS 27-DAY CYCLE NUMBER	PROVISIONAL SUNSPOT NUMBERS		OBSERVED FLUX OTTAWA 2800	SOLAR FLUX ADJUSTED TO 1 A.U.								
			R_I	$R_{A'}$		AFGL 15400	AFGL 8800	AFGL 4995	OTTAWA 2800	AFGL 2695	AFGL 1415	AFGL 606	AFGL 410	AFGL 245
1	305	1	80	81	162.0		291	178	159.6	149	147	104	38	16
2	306	2	88	81	157.0	576	296	179	154.5	147	140	100		25
3	307	3	75	63	149.8	570	298	167	147.4	140	138	97		19
4	308	4	100	80	145.9	546	261	163	143.4	133	138	93	36	13
5	309	5	100	69	138.8	496	248	147	136.4	124	129	89	37	16
6	310	6	76	62	144.7	597	295	166	142.1	153	140	103	40	16
7	311	7	106	86	144.9	584	285	150	142.3	143	129	94	46	23
8	312	8	82	89	147.6	562	246	152	144.8	143	130	96	38	20
9	313	9	124	94	150.4				147.5					
10	314	10	109	95	156.0	597	308	182	152.9	146	138	96	56	24
11	315	11	112	99	157.2	597	304	183	154.1	144	137	101	38	30
12	316	12	83	87	168.4	585	310	193	164.9	159	147	109	55	66
13	317	13	98	102	164.7	399	283	191	161.2	154	134	84	36	21
14	318	14	116	111	162.9	592	315	190	159.5	150	130	93	39	32
15	319	15	116	110	160.5*	475	317	198	157.0*	166	133	73	31	28
16	320	16	100	101	167.0	577	314	193	163.3	161	126	90	34	21
17	321	17	108	126	161.7	590	302	180	158.0	152	131	93	38	19
18	322	18	117	136	174.2*				170.2*					
19	323	19	122	126	186.8	602	332	212	182.3	162	144	99	38	19
20	324	20	118	124	193.9	590	327	216	189.2	178	153	99	41	40
21	325	21	131	131	205.8	580	354	234	200.9	190	159	107	44	8
22	326	22	141	132	237.0*	604	390	265	231.1*	215	187	147	72	66
23	327	23	120	111	201.1	598	365	216	196.1	186	161	107	47	34
24	328	24	96	89	177.5	541	327	198	172.9	177	158	113	48	24
25	329	25	75	70	169.2	600	326	188	164.8	170	150	108	42	19
26	330	26	73	65	173.3*	603	329	194	168.8*	161	153	108	38	20
27	331	27	71	65	163.0	598	323	182	158.6	144	141	102	40	21
28	332	1	74	70	164.7*	589	316	177	160.3*	158	141	104	39	20
29	333	2	71	74	165.9	504	309	186	161.4	151	141	95	39	32
30	334	3	72	76	169.5	560	275	185	164.8	165	138	91	42	31
MEAN			98.5	93.5	167.4	567	309	188	163.7	158	143	100	42	29

*Adjusted for burst.
Data gaps in AFGL Sagamore Hill data are due to equipment problems.
Errata to SGD, 456 Part I, page 9, August issue: mean R sub I should be 102.6 and not 026;
mean R sub A prime should be 105.1 and not 051.

OBSERVED AND PREDICTED SOLAR ACTIVITY INDICES

	SUNSPOT NUMBERS						2800 MHz FLUX Adjusted to 1 AU	
	Rz or R_I		Ra		Rs		Sa	
Date	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed	Monthly Mean	Smoothed
Dec 79	176.3	164	157.6	152	151.0	152	197.2	199
Jan 80	159.6	164	145.3	153	153.6	154	199.6	200
Feb	155.0	163	133.9	154	148.7	155	195.1	200
Mar	126.2	161	107.9	153	117.8	153	166.5	200
Apr	164.1	159	138.5	151	164.0	152	209.3	198
May	179.7	156	172.3	149	185.4	151	229.1	197
Jun	157.3	155	153.6	149	153.2	151	199.3	198
Jul	136.3	153	136.0	144	144.1	151	190.8	197
Aug	135.4	150	133.0	144	121.9	150	170.3	196
Sep	155.0	150	150.0	146	138.8	152	185.9	198
Oct	164.7	150	160.8	149	157.1	154	202.9	200
Nov	147.9	148	149.9	149	168.5	153	213.4	199
Dec	174.4	143	167.5	145	174.3	150	218.8	196
Jan 81	114.0	140	115.4	144	120.5	149	169.0	195
Feb	141.3	142	143.7	146	153.5	152	199.5	198
Mar	135.5	143	149.2	149	157.5	156	203.2	202
Apr	156.4	143	169.2	149	180.7	158	224.7	204
May	127.5	143	141.3	149	152.8	159	198.9	204
Jun	90.9	142	99.0	147	112.9	158	161.9	203
Jul	143.8	140	154.3	146	152.1	157	198.2	203
Aug	158.7	141	170.4	147	182.1	158	226.0	203
Sep	167.3	143	174.5	148	177.7	158	221.9	204
Oct	162.4	142	157.0	146	178.6	156	222.8	202
Nov	137.5	139	138.8	142	157.6	151	203.3	197
Dec	150.1	138	145.0	140	155.5	149	201.4	195
Jan 82	111.2	137	110.4	139	124.2	148	173.4	195
Feb	163.6	133	161.0	134	163.6	144	208.9	191
Mar	153.8	129	155.5	130	163.0	139	208.3	186
Apr	122.0	124*	121.9	124	113.9	134	162.9	182
May	82.2	119*	82.6	120	97.7	129	147.9	177
Jun	110.4	116(+ 4)*	113.5	117	129.6	125	177.4	---
Jul	106.1	111(∓ 7)*	113.3	111	116.0	119	164.8	---
Aug	107.6	105(∓ 8)*	110.5	105	123.9	113	172.1	---
Sep	118.8	100(∓ 8)*	117.8	100	118.5	107	167.1	---
Oct	94.3†	93(∓ 9)*	90.1	94	111.8	99	160.9	---
Nov	98.5†	89(∓ 9)*	---	89	114.8	94	163.7	---
Dec	---	85(∓10)*	---	86	---	90	---	---
Jan 83	---	81(∓11)*	---	81	---	86	---	---
Feb	---	78(∓11)*	---	79	---	83	---	---
Mar	---	76(∓12)*	---	77	---	81	---	---
Apr	---	74(∓13)*	---	75	---	79	---	---
May	---	72(±15)*	---	73	---	76	---	---

*An asterisk denotes either a value of the observed 12-month running mean or a predicted 12-month average that is based on preliminary observations of the international relative sunspot number (R_I). Parentheses enclose the 90% confidence limits. Shaded boxes enclose the most recent smoothed values; boxes not shaded enclose predicted values. Ra is the new symbol for R_A'. All tabulated entries of Ra are final values.

†RI replaces Rz as of January 1981.

SMOOTHED OBSERVED AND PREDICTED SUNSPOT NUMBERS FOR CYCLE 21

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1976	15	13	12	13	13	12	13	14	14	13	14	15
1977	17	18	20	22	24	26	29	33	39	46	52	57
1978	61	65	70	77	83	89	97	104	108	111	113	118
1979	124	131	137	141	147	153	155	155	156	158	162	165*
1980	164	163	161	159	156	155	153	150	150	150	148	143
1981	140	142	143	143	143	142	140	141	143	142	139	138
1982	137	133	129	124	119	116 (4)	111 (7)	105 (8)	100 (8)	93 (9)	89 (9)	85 (10)
1983	81 (11)	78 (11)	76 (12)	74 (13)	72 (15)	69 (16)	68 (18)	67 (19)	66 (21)	66 (22)	66 (22)	65 (23)
1984	64 (23)	61 (24)	57 (24)	53 (26)	51 (27)	50 (28)	49 (29)	47 (29)	45 (29)	43 (28)	41 (27)	39 (26)
1985	38 (26)	37 (25)	37 (25)	36 (24)	35 (24)	33 (24)	32 (22)	31 (21)	30 (21)	29 (22)	28 (23)	28 (23)
1986	28 (23)	27 (23)	25 (23)	24 (22)	22 (21)	20 (20)	18 (20)	17 (19)	17 (17)	16 (16)	16 (15)	15 (13)
1987	15 (12)	15 (11)	16 (11)	16 (12)	18 (13)	19 (14)	21 (14)					

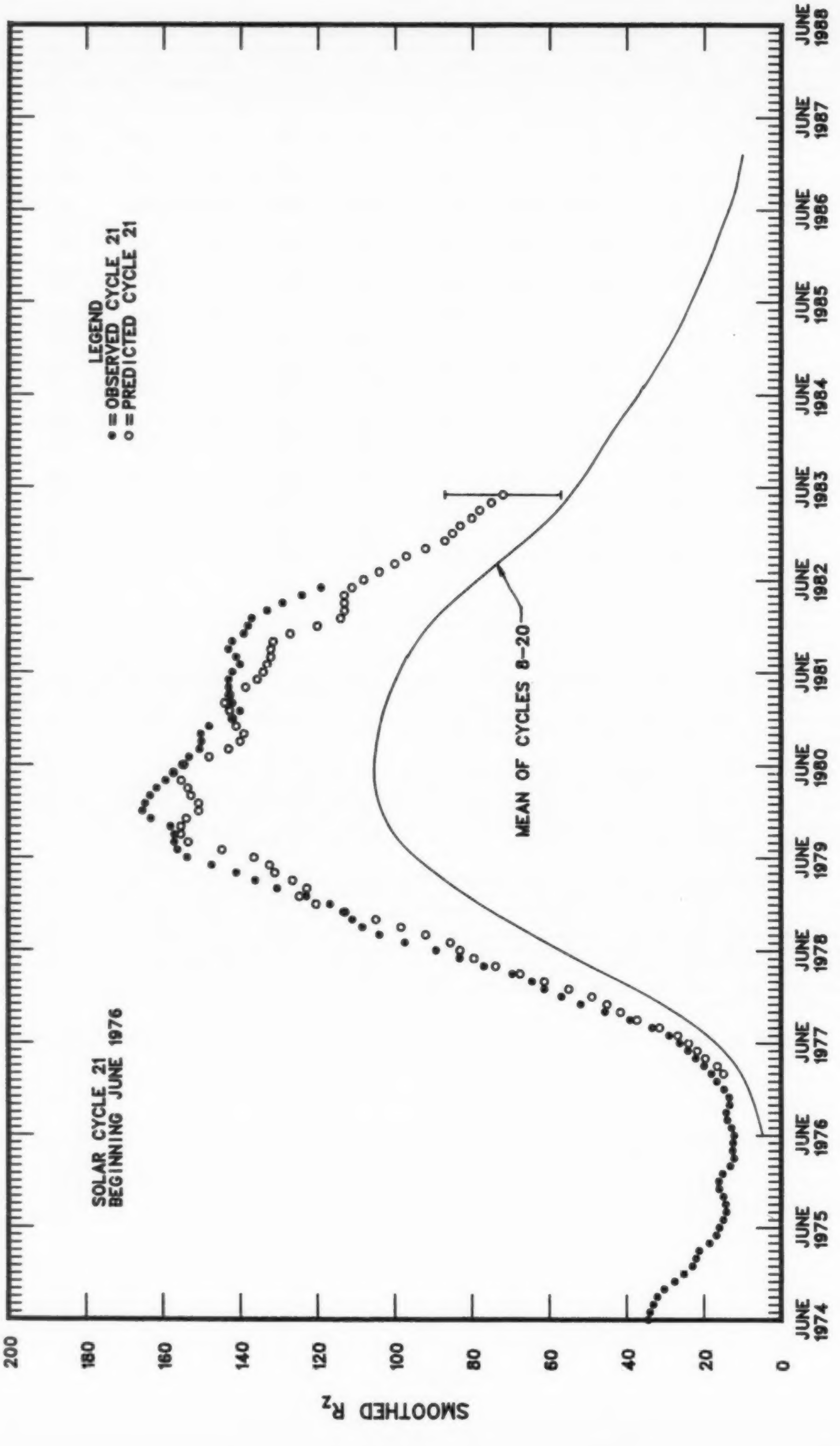
For the current solar cycle, this table gives observed smoothed sunspot numbers up to the one calculated from the most recently measured monthly mean. These smoothed observed values are based on final monthly mean Zurich numbers through 1980, on final International numbers through March 1982, and on provisional monthly mean International numbers thereafter. Some table entries after the June 1976 number will change slightly, when we incorporate final data for 1982.

The entries with numbers in parentheses below them denote predictions by the McNish-Lincoln method. (See page 10 in the February 1982 edition of the *Solar-Geophysical Data* supplement.) By adding to and subtracting from each prediction the number in parentheses, one generates the 90% confidence interval. Consider, for example, the May 1983 prediction tabulated above. There exists a 90% chance that in May 1983 the actual smoothed sunspot number will fall somewhere between 57 and 87.

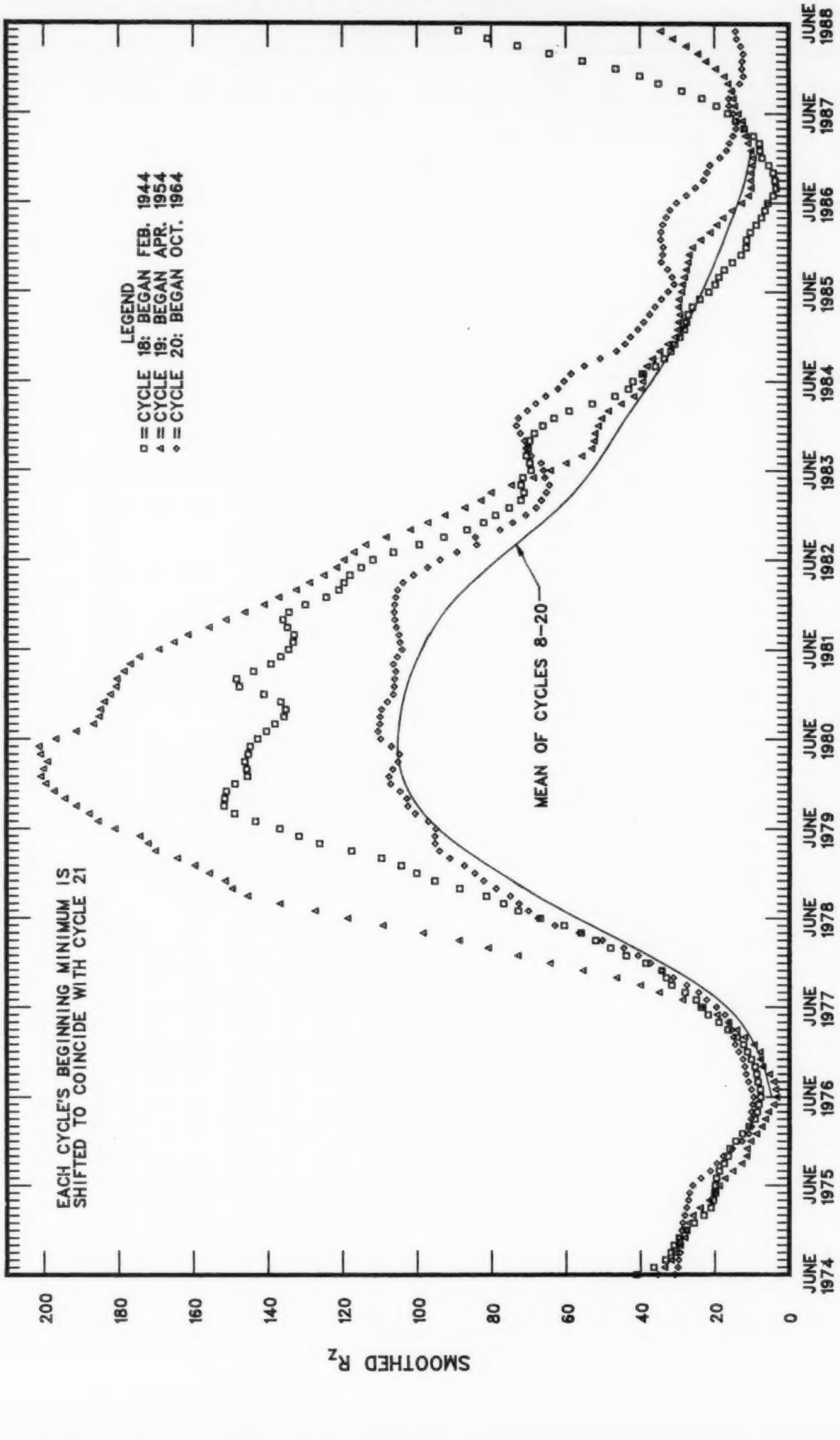
The McNish-Lincoln prediction method generates meaningful estimates of smoothed sunspot numbers for no more than 12 months ahead. Beyond a year the predictions regress rapidly toward the mean of all 13 cycles of data used in the computation. Furthermore, the method is very sensitive to the date defined as the beginning of the current sunspot cycle, that is, to the date of the most recent sunspot minimum. In *Solar-Geophysical Data*, Issues 390-401, we based the current cycle predictions on March 1976 as the end of cycle 20 and the onset of the new cycle 21. Later studies, including one published by M. Waldmeier, showed that June 1976 was more appropriately the minimum epoch. We therefore generated this table using the June 1976 date.

*MAXIMUM OF SUNSPOT CYCLE 21. The maximum smoothed sunspot number occurred in December 1979.

OBSERVED AND ONE-YEAR-AHEAD PREDICTED SMOOTHED SUNSPOT NUMBERS



SUPERPOSITION OF CYCLES 18, 19, AND 20



H-ALPHA SOLAR FLARES

NOVEMBER 1982

		Start	Max	End			NOAA/ USAF	CMP		Dur	Imp			Obs	Area Measurement Time	Apparent	Corr	
Sta	Day	(UT)	(UT)	(UT)	Lat	CMD	Region	Mo	Day	(Min)	Opt	Xray	See	Type	(UT)	(10^{-6} Disk)	(Sq Deg)	Remarks
LEAR	01	0048	0049	0053	N08	W67	3967	10	27.0	5	SF		3	C		16		
GOES	01	0125	0129	0132						7		C 1.2						
GOES	01	0316	0319	0327						11		C 1.1						
GOES	01	0329	0344	0409			3955			40		M 1.2						
PEKG	01	0432	0434	0449	N05	W27		10	30.2	17	SF			C	0434	42	.5	D
LEAR	01	0432	0440	0459	N04	W26	3966	10	30.2	27	SN		3	C		81		F
PEKG	01	0439	0440	0443	N05	W32		10	29.8	4	SN			C	0440	42	.5	D
GOES	01	0815	0822	0836						21		C 1.5						
GOES	01	0924	0945	0947						23		C 2.3						
GOES	01	1122	1125	1129						7		C 1.8						
RAMY	01	1154	1158	1303	N06	W27	3966	10	30.5	69	SN	C 1.5	3	C		92		
RAMY	01	1229	1236	1243	N22	E73	3970	11	7.1	14	SF		3	C				
RAMY	01	1621	1626	1632	S09	W64	3961	10	27.9	11	SN		3	C		18		
RAMY	01	1624	1627	1637	N23	E70	3970	11	7.1	13	SF		3	C		53		
HOLL	01	1831	1850	1910	S08	W66	3961	10	27.8	39	SN	C 2.4	3	C		128		F
RAMY	01	1844	1850	1908	S10	W65	3961	10	27.9	24	SB		3	C		84		FE
HOLL	01	1918	1939	1953	S08	W67	3961	10	27.8	35	SF		3	C		25		
RAMY	01	1925	1925	1939	N05	W33	3966	10	30.3	14	SF		3	C		20		F
HOLL	01	2006	2011	2050	N06	W33	3966	10	30.4	44	1B	C 3.5	3	C		211		FE
HOLL	01	2006	2012	2029	S08	W69	3961	10	27.7	23	SN		3	C		25		F
RAMY	01	2007	2010	2010D	N04	W33	3966	10	30.4	3D	SB		3	C		156		FE
PALE	01	2013E	2015U	2029D	N05	W32	3966	10	30.4	16D	SN		3	C		137		F
HOLL	01	2035	2052	2102	S06	W59	3961	10	28.4	27	SN		3	C		31		
HOLL	01	2056	2058	2114	N19	E63	3970	11	6.7	18	SN		3	C		34		
GOES	01	2231	2238	2249			3971			18		C 1.4						
HOLL	01	2242	2258	2310	S27	E39	3971	11	5.0	28	SF		3	C		95		
HOLL	01	2259	2300	2306	S07	W69	3961	10	27.8	7	SF		3	C		15		F
HOLL	01	2306	2308	2317	N06	W41	3966	10	29.9	11	SF		3	C		32		F
LEAR	01	2344	2347	2358	N06	W41	3966	10	29.9	14	SN		3	C		41		F
LEAR	01	2352	2357	0002	S09	W69	3961	10	27.8	10	SB		3	C		20		FE
HOLL	01	2353	2355	0003D	S09	W69	3961	10	27.8	10D	SN		1	C		32		
LEAR	02	0004	0004	0009	S09	W70	3961	10	27.7	5	SF		3	C		11		F
PEKG	02	0011	0013	0026	N07	W42		10	29.9	15	SN			C	0013	50	.7	D
LEAR	02	0012	0014	0041	N05	W41	3966	10	29.9	29	SB	C 3.7	3	C		132		FE
LEAR	02	0159	0203	0240	N05	W41	3966	10	30.0	41	SB	C 3.2	3	C		136		FE
GOES	02	0200	0203	0212						12		C 3.3						
PEKG	02	0212E	0212	0219	N06	W43		10	29.9	7D	SF			P	0212	29	.4	D
PEKG	02	0224E	0229	0239	N06	W43		10	29.9	15D	SF			P	0229	42	.6	D
PEKG	02	0229E	0229	0229D	S08	W73		10	27.6	15D	SF			P	0229	21		
GOES	02	0344	0346	0349						5		C 1.0						
LEAR	02	0438	0441	0453	N05	W43	3966	10	30.0	15	SF		3	C		21		F
LEAR	02	0522	0524	0555	N05	W44	3966	10	29.9	33	SN	C 2.2	3	C		54		F
GOES	02	0639	0650	0700			3961			21		C 1.4						
GOES	02	0733	0737	0742						9		C 1.3						
BUCA	02	0735		0745	N21	E63		11	7.1	10	SN			P	0740	54	1.2	D
GOES	02	0910	0916	0919			3966			9		C 3.4						
WEND	02	0913	0917	0924	N05	W40		10	30.4	11	SN			C	0917	131	1.8	
GOES	02	1220	1223	1225						5		C 1.1						
WEND	02	1339	1346	1350	S19	W62		10	28.8	11	SF			C	1346	56	1.3	G
GOES	02	1412	1415	1418						6		C 2.1						
RAMY	02	1458	1500	1503	N21	E56	3970	11	6.9	5	SN		3	C		37		
RAMY	02	1458E	1505	1530	N05	W49	3966	10	30.0	32D	SF		3	C		79		
RAMY	02	1620	1631	1704	S11	W89	3961	10	27.0	44	1N	C 5.3	3	C				
HOLL	02	1630	1631	1646D	S10	W84	3961	10	27.4	16D	SN		3	C				
HOLL	02	1727	1728	1743	N04	W46	3966	10	30.3	16	SF	C 5.3	2	C		27		F
RAMY	02	1727	1729	1736	N03	W46	3966	10	30.3	9	SF		3	C		28		
RAMY	02	1732	1737	1800	S10	W78	3961	10	27.9	28	SN	C 3.5	3	C				
RAMY	02	1745	1747	1802	N05	W45	3966	10	30.4	17	SN		3	C		46		
PALE	02	1818	1822	1841	N05	W43	3966	10	30.5	23	SN		3	C		21		F
PALE	02	1919	1920	1924	N05	W50	3966	10	30.1	5	SF		3	C		29		
RAMY	02	1919	1920	1933	N05	W52	3966	10	29.9	14	SF		3	C		46		F
RAMY	02	1922	1937	1955	S09	W78	3961	10	27.9	33	SF		3	C				
GOES	02	2159	2213	2227						28		C 5.2						
GOES	03	0047	0054	0057						10		C 2.4						
LEAR	03	0250	0252	0301	N06	W55	3966	10	30.0	11	SF	C 1.8	3	C		21		F
PEKG	03	0340	0345	0347	S07	W88		10	27.6	7	SF			C	0345	34		D
LEAR	03	0342	0343	0346	S08	W81	3961	10	28.1	4	SF		3	C				F
LEAR	03	0350	0350	0418	N06	W49	3966	10	30.5	28	SN	C 4.4	3	C		32		F
PEKG	03	0350	0356	0420D	N06	W52		10	30.3	30D	SF			P	0356	84	1.4	E

H - ALPHA SOLAR FLARES

NOVEMBER 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	03	0511	0512	0544	N06	W50	3966	10	30.5	33	SF		3	C		28		K
LEAR	03	0511	0533	0544	N06	W50	3966	10	30.5	33	SF		3	C		47		F K
PEKG	03	0602	0607	0614	N07	W52		10	30.4	12	SN			C	0607	80	1.4	E
PEKG	03	0602	0607	0627	S05	W90		10	27.5	25	SN			C	0607	34		D
LEAR	03	0605	0605	0622	S08	W84	3961	10	28.0	17	SN	C 2.0	3	C				
GOES	03	0708	0713	0717						9		C 1.5						
LEAR	03	0735	0736	0748	N05	W51	3966	10	30.5	13	SN	C 2.7	3	C		137		F
GOES	03	0907	0929	0938						31		C 6.7						
GOES	03	1328	1331	1335						7		C 1.0						
HOLL	03	1529	1531	1534	N05	E58	3974	11	8.0	5	SF		3	C		18		
HOLL	03	1530	1531	1538	N05	W57	3966	10	30.4	8	SF		3	C		16		
HOLL	03	1552	1558	1610	N04	E58	3974	11	8.0	18	SN		3	C		42		F
HOLL	03	1601	1607	1612	N05	W57	3966	10	30.4	11	SF		3	C		30		
GOES	03	1625	1630	1634						9		C 1.2						
GOES	03	1639	1642	1645			3974			6		C 1.2						
RAMY	03	1640	1641	1647	N07	E55	3974	11	7.8	7	SN		3	C		43		
HOLL	03	1645E	1648U	1657	N04	E57	3974	11	8.0	12D	SF		3	C		22		F
HOLL	03	1733	1735	1742	N04	E57	3974	11	8.0	9	SF		3	C		36		F
HOLL	03	1813	1813	1822	N04	E57	3974	11	8.0	9	SF		3	C		17		F
GOES	03	2139	2145	2152						13		C 1.1						
HOLL	03	2140	2207	2209	N05	W61	3966	10	30.3	29	SF		3	C		13		
LEAR	04	0123	0123	0132	S10	W60	3969	10	30.5	9	SF		3	C		22		H
GOES	04	0240	0245	0251						11		C 1.3						
GOES	04	0508	0511	0513						5		C 2.4						
GOES	04	0543	0547	0550						7		C 2.3						
ISTA	04	0635E		0730	S11	W60		10	30.8	55D	1N							
GOES	04	0722	0729	0731						9		C 1.8						
GOES	04	1032	1037	1043						11		C 1.3						
HOLL	04	1410E	1437	1548	S11	W63	3969	10	30.8	98D	1B	C 4.8	3	C		152		ZF
HOLL	04	1602	1624	1640	S10	W69	3969	10	30.5	38	SF		3	C		19		K
HOLL	04	1602	1625	1640	S10	W69	3969	10	30.5	38	SN		3	C		26		F K
GOES	04	1640	1643	1646			3969			6		C 1.0						
HOLL	04	1653	1653	1700	S10	W69	3969	10	30.5	7	SF		3	C		11		
GOES	04	1739	1743	1746						7		C 1.4						
GOES	04	1852	1858	1904						12		C 1.1						
HOLL	04	1917	1919	1930	N06	W73	3966	10	30.3	13	SF		3	C				
HOLL	04	2012	2012	2020	S10	W71	3969	10	30.5	8	SF		3	C		14		F
HOLL	04	2043	2050	2051	S10	W71	3969	10	30.5	8	SF		3	C				
HOLL	04	2050	2053	2107	N04	E42	3974	11	8.0	17	SF		3	C		18		F
PALE	04	2052	2052	2104	N07	E42	3974	11	8.0	12	SF		3	C		19		
HOLL	04	2114	2116	2128	S10	W72	3969	10	30.5	14	SN	C 1.7	3	C				F
HOLL	04	2149	2151	2159	S10	W73	3969	10	30.4	10	SN		3	C				F
HOLL	04	2218	2221	2225	S09	W72	3969	10	30.5	7	SF		3	C				
HOLL	04	2313	2322	2341	S10	W73	3969	10	30.5	28	SF		3	C				
GOES	05	0629	0644	0651						22		C 1.4						
GOES	05	0840	0850	0856						16		C 1.3						
HOLL	05	1944	1947	2000	N04	E34	3974	11	8.4	16	SN	C 1.0	3	C		110		
PALE	05	1945	1946	2000	N05	E34	3974	11	8.4	15	SN		3	C		84		F
LEAR	06	0024	0025	0028	N10	E59	3976	11	10.5	4	SF		3	C		44		
PALE	06	0025	0025	0028	N12	E58	3976	11	10.4	3	SN		3	C		43		
PALE	06	0058	0059	0110	N13	E50		11	9.8	12	SF		3	C		20		
LEAR	06	0145	0152	0207	N11	E51	3979	11	9.9	22	SF		3	C		24		
LEAR	06	0326	0326	0332	N11	E49	3979	11	9.8	6	SF		3	C		18		
GOES	06	0457	0459	0503						6		C 1.0						
LEAR	06	0819	0820	0835	N24	E20	3973	11	7.9	16	SF		3	C		40		F
GOES	06	0819	0840	0843			3937			24		C 1.2						
GOES	06	0934	0938	0942						8		C 1.2						
HOLL	06	1508	1519	1536	N23	E13	3973	11	7.6	28	SF		3	C		33		
HOLL	06	1533	1537	1553	N09	E40	3979	11	9.7	20	SF		3	C		42		
HOLL	06	1631	1633	1636	N10	E40	3979	11	9.7	5	SF		3	C		29		
HOLL	06	1647	1647	1652	N10	E40	3979	11	9.7	5	SF		3	C		24		
HOLL	06	1745	1746	1750	N08	E40	3979	11	9.7	5	SF		3	C		41		
GOES	06	2339	2346	2354						15		C 1.2						
PALE	07	0003	0004	0010	N12	E50	3976	11	10.8	7	SF		3	C		23		
LEAR	07	0311	0314	0335	N11	E49	3976	11	10.8	24	SF		3	C		33		
GOES	07	1355	1405	1421						26		C 1.9						
RAMY	07	1831	1832	1839	S11	W08	3983	11	7.2	8	SF		3	C		25		

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
GOES	07	2044	2051	2102						18		C 1.2						
GOES	08	0030	0043	0052						22		C 2.7						
GOES	08	0223	0226	0228						5		C 2.1						
GOES	08	0437	0441	0505						28		C 1.5						
LEAR	08	0545	0550	0632	N13	W08	3972	11	7.6	47	SN	C 2.1	3	C		128		F
PEKG	08	0548	0554	0626	N13	W08		11	7.6	38	SF			P	0554	130	1.4	E
GOES	08	0644	0648	0701						17		C 2.0						
GOES	08	0856	0859	0901						5		C 2.0						
GOES	08	1000	1016	1025						25		C 3.8						
GOES	08	1134	1139	1157						23		C 2.1						
GOES	08	1204	1209	1212			3987			8		C 4.7						
RAMY	08	1211	1218	1236	S11	E89		11	15.2	25	SB		3	C				
RAMY	08	1305	1308	1315	S10	E81		11	14.6	10	SF		3	C				
RAMY	08	1306	1312	1320	N08	E11	3979	11	9.4	14	SF		3	C		22		
GOES	08	1439	1441	1452						13		C 1.4						
GOES	08	1529	1535	1543						14		C 2.3						
GOES	08	1653	1700	1703						10		C 2.0						
HOLL	08	1721E	1721U	1746	S13	E72	3987	11	14.2	25D	SF		3	C				
GOES	08	1836	1927	2015						99		C 2.8						
PALE	08	2049	2052	2109	N13	E22	3976	11	10.5	20	SF		3	C		115		F
GOES	08	2149	2213	2231						42		C 3.5						
HOLL	08	2222	2227	2255	S09	E82	3987	11	15.1	33	SF		3	C				
GOES	09	0030	0111	0112						42		M 1.0						
GOES	09	0112	0145	0218						66		M 1.4						
GOES	09	1006	1021	1025						19		C 1.3						
GOES	09	1244	1247	1253						9		C 1.9						
GOES	09	1629	1631	1637						8		C 1.2						
RAMY	09	1726E	1733U	1752	S12	E72	3987	11	15.2	26D	SN		3	C				
GOES	09	1845	1856	1902						17		C 1.2						
PALE	09	2017	2028	2037	S11	E71	3987	11	15.2	20	SF	C 2.0	3	C				
GOES	09	2315	2318	2324						9		C 2.0						
GOES	10	0016	0024	0034						18		C 3.4						
GOES	10	0220	0237	0257						37		C 2.1						
LEAR	10	0359	0405	0428	S11	E67	3987	11	15.2	29	SN	C 3.9	3	C		38		
LEAR	10	0602	0602	0607	S13	E63	3987	11	15.0	5	SN	C 2.5	3	C		34		
GOES	10	0827	0831	0837						10		C 1.3						
LEAR	10	0901	0918	0929D	S11	E61	3987	11	15.0	28D	SN	C 4.3	3	C		86		F
GOES	10	1510	1525	1531						21		C 1.0						
RAMY	10	1543	1555	1630	S10	E59	3987	11	15.1	47	SN		3	C		102		
GOES	10	1619	1636	1637						18		C 1.4						
RAMY	10	1746	1804	1905	S13	E62	3987	11	15.4	79	2B		3	C		326		
PALE	10	1751	1804U	1906	S11	E55	3987	11	14.9	75	2B	M 2.1	3	C		465		FE
PALE	10	1758	1803U	1858	S05	E48	3990	11	14.3	60	SN		3	C		130		
RAMY	10	1800	1806	1830D	S07	E53	3990	11	14.7	30D	SB		3	C		75		
PALE	10	1924	1924	1930	S11	E62	3987	11	15.5	6	SF		3	C		13		
PALE	10	1924	1925	1930	N21	W38	3973	11	7.9	6	SF		3	C		17		
LEAR	11	0051	0055	0106	S17	E53		11	15.1	15	SF		3	C		34		F
LEAR	11	0216	0225	0244	S12	E60	3987	11	15.6	28	SN	C 5.7	3	C		61		
LEAR	11	0219	0221	0242	S17	E51		11	15.0	23	SF		3	C		40		
PEKG	11	0220E	0226	0237	S13	E59		11	15.6	17D	SN			P	0226	46	1.0	E
LEAR	11	0428	0429	0434	S12	E57	3987	11	15.5	6	SN		3	C		26		
LEAR	11	0538	0539	0555	N08	E45		11	14.6	17	SF		3	C		37		F
GOES	11	0628	0632	0638						10		C 1.2						
GOES	11	0654	0658	0704			3987			10		C 1.9						
LEAR	11	0659	0700	0706	S13	E57	3987	11	15.6	7	SF		3	C		28		F
GOES	11	0809	0821	0826			3987			17		C 1.4						
LEAR	11	0815	0816	0820	S13	E57	3987	11	15.6	5	SF		2	C		16		
LEAR	11	0901	0905	0908	S13	E56	3987	11	15.6	7	SN	C 2.1	2	C		15		
LEAR	11	0939	0943	0948D	S13	E55	3987	11	15.6	9D	SN	C 1.3	2	C		43		F
GOES	11	1019	1022	1027						8		C 1.9						
RAMY	11	1404	1405	1410	N09	W35	3988	11	9.0	6	SF		3	C		66		
GOES	11	1526	1529	1551						25		C 1.9						
GOES	11	1602	1609	1615						13		C 2.3						
PALE	11	2012	2013U	2034D	S14	E39	3987	11	14.8	22D	SF	C 1.4	3	C		30		F
PALE	11	2106	2140U	2146	S10	E46	3987	11	15.3	40	SF	C 2.5	3	C		36		F
PALE	11	2154	2201	2228	S10	E46	3987	11	15.4	34	SF		3	C		43		F
HOLL	11	2224	2243	2304D	S11	E40	3987	11	14.9	40D	1B	C 7.1	1	C		296		ZFK

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
HOLL	11	2224	2256	2304D	S11	E40	3987	11	14.9	40D	1N		1	C		271		K
PALE	11	2230	2254	0002	S10	E40	3987	11	14.9	92	1N		3	C		216		F
LEAR	11	2239E	2243		S11	E41	3987	11	15.0	D	1N		3	C		178		F K
LEAR	11	2239E	2250		S11	E41	3987	11	15.0	D	1N		3	C		168		K
LEAR	11	2241	2247	2251	S07	E39	3990	11	14.9	10	SF		3	C		34		
LEAR	12	0132	0134	0201	S12	E43	3987	11	15.3	29	SN	C 2.6	3	C		40		F
LEAR	12	0258	0307	0522	S12	E38	3987	11	15.0	144	SF		3	C		104		K
LEAR	12	0258	0418	0522	S12	E38	3987	11	15.0	144	1B	M 2.0	3	C		240		FEK
PEKG	12	0331	0355	0455	S11	E38		11	15.0	84	1N			P	0355	273	3.7	FU
PEKG	12	0525	0546	0559D	S15	E31		11	14.6	34D	SN			P	0546	134	1.7	F
LEAR	12	0528	0543	0724	S15	E30	3987	11	14.5	116	1B	M 1.1	3	C		202		FE
LEAR	12	0706	0709	0728	N08	E31	3991	11	14.6	22	SN		3	C		143		F
LEAR	12	0818	0833	0958D	S12	E33	3987	11	14.8	100D	1N		3	C		181		K
LEAR	12	0818	0916	0958D	S12	E33	3987	11	14.8	100D	1B	C 5.4	3	C		257		FEK
GOES	12	0900	0917	0944			3987			44		M 2.6						
WEND	12	0902	0906	0937	S11	E40		11	15.4	35	1N			C	0906	175	2.4	
GOES	12	1157	1200	1202						5		C 3.8						
RAMY	12	1205	1325	1358D	S13	E36	3987	11	15.2	113D	SN		3	C		151		F K
RAMY	12	1205	1344	1358D	S13	E36	3987	11	15.2	113D	1N		3	C		227		K
HOLL	12	1407	1430	1441	S08	E29	3990	11	14.8	34	SN		3	C		65		
HOLL	12	1407E	1435	1535	S11	E33	3987	11	15.1	88D	2B	X 1.1	3	C		638		UE
HOLL	12	1416E	1416U	1418D	S17	E22	3987	11	14.3	2D	SB		2	C		100		F
HOLL	12	1425	1425	1438	N07	E27	3991	11	14.6	13	SF		3	C		21		
HOLL	12	1605	1608	1622	S07	E29	3990	11	14.8	17	SF		3	C		27		
HOLL	12	1610	1623	1640	N15	W27	3976	11	10.6	30	SF		3	C		109		F
RAMY	12	1615	1623	1635	N14	W27	3976	11	10.6	20	SF		3	C		65		F
HOLL	12	1621	1625	1632	S14	E37	3987	11	15.5	11	SF		3	C		35		
HOLL	12	1640	1648	1653	S07	E28	3990	11	14.8	13	SF		3	C		25		
HOLL	12	1659	1703	1710	S05	E28	3990	11	14.8	11	SF		3	C		26		
HOLL	12	1747	1747	1809	N15	W28	3976	11	10.6	22	SF		3	C		41		
PALE	12	1814	1815	1821	S11	E28	3987	11	14.9	7	SF		3	C		33		F
HOLL	12	1857	1913	2037	S12	E27	3987	11	14.8	100	SB	C 3.5	4	C		86		F K
HOLL	12	1857	2031	2037	S12	E27	3987	11	14.8	100	SF		4	C		89		K
PALE	12	1902	1912	1946	S15	E28	3987	11	14.9	44	SN		3	C		79		F
HOLL	12	1912	1912	1919	S07	E27	3990	11	14.8	7	SF		3	C		24		
HOLL	12	1938	1950	1958	N15	W28	3976	11	10.7	20	SF		3	C		51		F
HOLL	12	2008	2008	2012	N23	W65	3981	11	7.8	4	SF		3	C		14		
PALE	12	2027	2027	2034	S13	E29	3987	11	15.0	7	SN	C 3.2	3	C		103		
PALE	12	2115	2116	2125	S17	E32	3987	11	15.3	10	SN		3	C		76		
HOLL	12	2121	2128	2256	N09	W43	3979	11	9.7	95	SN	C 4.3	3	C		165		U
PALE	12	2124	2125	2242	N10	W39	3979	11	10.0	78	SF		3	C		32		U
HOLL	12	2146	2148	2201	S12	E36	3987	11	15.6	15	SN		3	C		64		F
PALE	12	2147	2149	2153	S12	E33	3987	11	15.4	6	SN		3	C		55		
PALE	12	2219	2220	2241	S16	E33	3987	11	15.4	22	1N	C 3.6	3	C		212		F
HOLL	12	2221E	2224U	2245	S10	E29	3987	11	15.1	24D	SN		2	C		140		F
PALE	12	2352	0008	0109	S11	E26	3987	11	15.0	77	2B	M 4.9	3	C		789		FE
LEAR	12	2352	0010	0203	S12	E27	3987	11	15.0	131	2B		3	C		632		FEK
LEAR	12	2352	0048	0203	S12	E27	3987	11	15.0	131	SN		3	C		95		K
LEAR	13	0228	0315	0448	S15	E25	3987	11	15.0	140	1B	M 1.8	3	C		395		ZUK
LEAR	13	0228	0343	0448	S15	E25	3987	11	15.0	140	1N		3	C		185		K
PEKG	13	0240E	0245	0304	S16	E24		11	14.9	24D	SN			P	0245	130	1.5	F
LEAR	13	0300	0307	0318	S18	E13	3984	11	14.1	18	SF		3	C		46		F
PEKG	13	0309	0315	0350D	S15	E24		11	14.9	41D	1N			P	0315	294	3.5	FK
PEKG	13	0309	0320	0350D	S15	E21		11	14.7	41D	1N			P	0320	265	3.1	F
GOES	13	0331	0340	0350			3987			19		M 1.4						
LEAR	13	0449	0452	0459	S14	E25	3987	11	15.1	10	SN	C 6.8	3	C		176		F
PEKG	13	0450	0452	0500	S15	E25		11	15.1	10	1N			C	0452	210	2.5	E
PEKG	13	0534E	0534	0545	S12	E21		11	14.8	11D	SF			C	0534	59	.6	E
LEAR	13	0534	0537	0542	S12	E22	3987	11	14.9	8	SN		3	C		42		
LEAR	13	0554	0605	0646	S12	E22	3987	11	14.9	52	1B	M 3.2	3	C		329		FE
PEKG	13	0600E	0610	0700	S12	E22		11	14.9	60D	SN			C	0610	168	1.9	EK
PEKG	13	0600E	0635	0700	S11	E23		11	15.0	60D	SN			C	0635	63	.7	ET
LEAR	13	0826	0829	0838	S14	E23	3987	11	15.1	12	SN	C 4.2	3	C		41		F
GOES	13	0914	0921	0927						13		C 3.5						
LEAR	13	0942	0943	0949	S15	E22	3987	11	15.1	7	SB	C 4.3	2	C		62		FE
GOES	13	1204	1207	1209						5		C 2.0						
RAMY	13	1219	1223	1230	S14	E21	3987	11	15.1	11	SF		3	C		28		
RAMY	13	1414	1439	1539D	S14	E19	3987	11	15.0	85D	1B	C 8.4	3	C		458		
HOLL	13	1436	1443	1530D	S17	E21	3987	11	15.2	54D	1B	M 1.5	3	C		277		F

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RAMY	13	1635	1639	1655	S17	E20	3987	11	15.2	20	SN		3	C		38		
RAMY	13	1750	1801	1808	S13	E83		11	20.0	18	SF		3	C				
RAMY	13	1852	1853	1919	S16	E15	3987	11	14.9	27	SF	C 2.2	3	C		53		F
PALE	13	2105	2106	2124	S16	E13	3987	11	14.9	19	SF	C 2.2	3	C		25		
HOLL	13	2106	2108	2117	S17	E13	3987	11	14.9	11	SF		3	C		22		F
HOLL	13	2132	2133	2146	S17	E11		11	14.7	14	SF		3	C		39		F
GOES	13	2256	2300	2306						10		C 1.0						
LEAR	13	2358	2358	0005	S15	E14	3987	11	15.1	7	SN		3	C		65		F
LEAR	14	0007	0020	0105	S11	E15	3987	11	15.1	58	1B		3	C		303		K
LEAR	14	0007	0032	0105	S11	E15	3987	11	15.1	58	2B	M 2.2	3	C		495		FEK
PALE	14	0020	0032	0058	S11	E13	3987	11	15.0	38	1N		3	C		421		UF
GOES	14	0507	0510	0514						7		C .8						
LEAR	14	0556	0557	0604	S12	E08	3987	11	14.9	8	SF	C .8	3	C		41		UF
LEAR	14	0650	0650	0704	S12	E08	3987	11	14.9	14	SF	C 1.5	3	C		28		F
BUCA	14	0830		0900	N15	W48		11	10.7	30	SN			C	0846	107	1.6	
LEAR	14	0832	0847	0900	N13	W47	3976	11	10.8	28	SF	C 1.0	3	C		111		F
LEAR	14	0915	0915	0921	S13	E15	3987	11	15.5	6	SN	C 1.4	3	C		56		
GOES	14	1034	1041	1046						12		C 1.0						
RAMY	14	1526	1531	1549	S12	E11	3987	11	15.5	23	SN	C 1.3	3	C		57		F
RAMY	14	1648	1658	1727	S11	E05	3987	11	15.1	39	SF	C 1.2	3	C		32		
RAMY	14	1804	1808	1826	S19	E00	3995	11	14.8	22	SF		3	C		57		
PALE	14	1807	1808	1815	S18	E00	3995	11	14.8	8	SF		3	C		22		
RAMY	14	1857	1912	1952	S09	E64	3994	11	19.6	55	SN	C 2.2	3	C		64		
PALE	14	1900	1907	1919	S09	E65	3994	11	19.7	19	SF		3	C		33		
GOES	14	1902	1905	1917			3994			15		C 1.9						
RAMY	14	1945	1945	1952	S12	W00	3987	11	14.8	7	SN	C 2.1	3	C		35		
GOES	14	2002	2005	2007			3987			5		C 2.4						
HOLL	14	2011	2012	2022	S12	W01	3987	11	14.8	11	SF		3	C		25		
HOLL	14	2032	2032	2038	S12	W01	3987	11	14.8	6	SN		3	C		30		
HOLL	14	2255	2308	2322	N10	W68	3979	11	9.8	27	SF		3	C		17		
HOLL	14	2302	2303	2308D	S11	W03	3987	11	14.7	6D	SF		3	C		26		
HOLL	14	2317	2320	2324	S10	E62	3994	11	19.6	7	SF		3	C		36		
LEAR	15	0143	0143	0312	S12	W01	3987	11	15.0	89	SF		3	C		44		K
LEAR	15	0143	0202	0312	S12	W01	3987	11	15.0	89	2B	M 8.5	3	C		943		ZFK
PALE	15	0157	0208	0253D	S11	E00	3987	11	15.1	56D	2B		3	C		972		ZU
PEKG	15	0159	0205	0229	S11	W01		11	15.0	30	1B			C	0205	484	5.2	F
PALE	15	0204	0204	0253D	S06	W03	3990	11	14.9	49D	SN		3	C		30		
GOES	15	0636	0639	0646						10		C 1.3						
LEAR	15	0833	0842	0915	S12	W02	3987	11	15.2	42	SF	C 1.5	3	C		171		F
GOES	15	1222	1225	1227						5		C 1.4						
RAMY	15	1337	1337	1355	S12	W01	3987	11	15.5	18	SN	C 1.0	3	C		28		F
GOES	15	1425	1428	1430						5		C .8						
RAMY	15	1439	1440	1453	S13	E63	3994	11	20.4	14	SN	C 1.1	3	C		34		
HOLL	15	1548	1551	1602D	S13	E59	3994	11	20.1	14D	SF		3	C		30		F
HOLL	15	1601	1618	1728	S12	W09	3987	11	15.0	87	1B	M 1.3	3	C		415		ZUK
HOLL	15	1601	1654	1728	S12	W09	3987	11	15.0	87	1B		3	C		270		K
RAMY	15	1606	1618	1725	S12	W09	3987	11	15.0	79	1B		3	C		292		UF
RAMY	15	1618	1620	1720	S08	W12	3990	11	14.8	62	SF		3	C		46		
HOLL	15	1706	1707	1715	N15	W62	3976	11	11.0	9	SF		3	C		14		
RAMY	15	1834	1840	1933	S12	W04	3987	11	15.5	59	SN		3	C		100		
HOLL	15	1834	2006	2007D	S12	W05	3987	11	15.4	93D	SB	C 3.3	3	C		135		E
HOLL	15	1857	1858	1920	S13	E57	3994	11	20.1	23	SF		3	C		27		
HOLL	15	1908	1922	1936	N11	W78	3979	11	9.9	28	SF		3	C				
GOES	15	1946	1949	1951			3987			5		C 1.9						
HOLL	15	1953	2025	2049	N11	W80	3979	11	9.8	56	SF		3	C				
GOES	15	2001	2007	2014						13		C 3.8						
HOLL	15	2130E	2306	2308	S12	W06	3987	11	15.4	98D	2N	C 2.7	3	C		1004		FH
HOLL	15	2213	2214	2220	N11	W80	3979	11	9.9	7	SN		3	C				
HOLL	15	2245E	2248	2250D	N14	W71	3976	11	10.6	5D	2N		3	C		314		F
LEAR	15	2344	2344	2349	S15	W13	3987	11	15.0	5	SN	C 2.0	3	C		29		
GOES	16	0047	0051	0100						13		C 1.7						
LEAR	16	0200	0201	0208	S11	W15	3987	11	15.0	8	SN		3	C		65		F
LEAR	16	0242	0246	0259	S13	W16	3987	11	14.9	17	SF	C 2.1	3	C		66		F
PALE	16	0245	0245	0248	S12	W16	3987	11	14.9	3	SF		3	C		27		F
PALE	16	0256	0257	0301D	S13	E56	3994	11	20.4	5D	SF	C 1.9	3	C		82		F
LEAR	16	0257	0326	0431	S14	E57	3994	11	20.4	94	SB	C 8.7	3	C		98		FE
PEKG	16	0314E	0321	0410	S15	E57		11	20.5	56D	SN			P	0321	59	1.2	EK
PEKG	16	0314E	0350	0410	S15	E58		11	20.5	56D	SN			P	0350	63	1.3	E

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP		Dur (Min)	Imp		See	Obs Type	Area Measurement			Remarks
								Mo	Day		Opt	Xray			Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	
LEAR	16	0340	0359	0519	S13	W12	3987	11	15.2	99	1N	M 2.1	3	C		305		F
PEKG	16	0345	0350	0456	S13	W12		11	15.3	71	SN			C	0350	160	1.7	EK
PEKG	16	0345	0417	0456	S12	W12		11	15.3	71	1N			C	0417	202	2.2	F
LEAR	16	0528	0532	0534	N10	W86	3979	11	9.8	6	SF		3	C		9		
GOES	16	0748	0754	0756						8		C 1.2						
LEAR	16	0812	0820	0834	S12	W20	3987	11	14.8	22	SN	C 2.6	3	C		83		F
LEAR	16	0910	0918	0924D	S14	W20	3987	11	14.9	14D	SF		2	C		72		F
GOES	16	0923	0928	0934			3987			11		C 4.7						
GOES	16	1036	1047	1100						24		C 2.6						
RAMY	16	1417	1418	1430D	S12	W21	3987	11	15.0	13D	SB	C 2.0	3	C		62		
GOES	16	1612	1616	1619						7		C 1.8						
RAMY	16	1710	1711	1717	S12	W19	3987	11	15.3	7	SN	C 2.0	3	C		40		
RAMY	16	1834	1834	1852	S13	W19	3987	11	15.3	18	SF	C 1.4	3	C		25		
GOES	16	1957	2000	2002						5		C 2.0						
PALE	16	2041E	2113U	2233D	S12	W27	3987	11	14.8	112D	1B	M 2.3	3	C		442		
GOES	16	2323	2332	2346						23		C 6.1						
GOES	17	0124	0136	0151						27		C 1.9						
LEAR	17	0307	0307	0316	S12	W30	3987	11	14.9	9	SF	C 2.0	3	C		22		F
LEAR	17	0313	0314	0329	S14	E38	3994	11	20.0	16	SF		3	C		31		
LEAR	17	0333	0333	0349	S12	W29	3987	11	15.0	16	SN	C 2.7	3	C		21		F K
LEAR	17	0333	0342	0349	S12	W29	3987	11	15.0	16	SF		3	C		41		K
LEAR	17	0422	0431	0456	S12	W30	3987	11	14.9	34	SF	C 3.8	3	C		73		F
LEAR	17	0532	0536	0607	S17	W32	3995	11	14.8	35	SF	C 2.4	3	C		82		
PEKG	17	0534	0535	0600	S16	W32		11	14.8	26	SN			C	0535	92	1.2	E
LEAR	17	0534	0536	0540	S13	W29	3987	11	15.0	6	SF		3	C		26		F
LEAR	17	0758	0801	0808	S12	W33	3987	11	14.8	10	SF		3	C		23		F
LEAR	17	0815	0816	0824	S16	E35	3994	11	20.0	9	SF		3	C		33		F
LEAR	17	0905	0906	0912D	S16	W34	3995	11	14.8	7D	SF		3	C		25		
GOES	17	0947	0951	0956						9		C 2.0						
GOES	17	1036	1057	1119						43		M 1.2						
RAMY	17	1322	1322	1327	S07	E86		11	24.0	5	SF		3	C		24		
RAMY	17	1357	1406	1544	S12	W34	3987	11	15.0	107	1B	M 2.8	3	C		359		
RAMY	17	1737	1744	1810	S16	W53	3984	11	13.7	33	SF		3	C		17		
RAMY	17	1738	1744	1810	S21	W41	3995	11	14.6	32	SF		3	C		19		
GOES	17	1807	1809	1818						11		C 1.3						
GOES	17	2002	2005	2011						9		C 1.3						
GOES	17	2107	2111	2119						12		C 1.1						
GOES	17	2148	2155	2159						11		C 1.4						
GOES	18	0017	0024	0029						12		C 2.2						
LEAR	18	0124	0124	0141	S24	W45	3995	11	14.6	17	SF	C 2.1	3	C		27		F
LEAR	18	0301	0304	0323	S12	W40	3987	11	15.1	22	SN	C 3.8	3	C		79		F
PEKG	18	0306E	0306	0307	S12	W39		11	15.2	1D	SN			P	0306	97	1.3	E
LEAR	18	0337	0337	0356	S17	E32	3994	11	20.6	19	SF		3	C		27		
LEAR	18	0455	0506	0626	S15	E30	3994	11	20.5	91	1B	M 1.4	3	C		343		FE
PEKG	18	0459	0508	0535	S15	E30		11	20.5	36	1B			C	0508	210	2.6	F
LEAR	18	0613	0614	0628	S12	W42	3987	11	15.1	15	SF	C 2.4	3	C		21		
RAMY	18	1311	1348	1350D	S13	E21	3994	11	20.1	39D	SB		3	C		185		F
GOES	18	1343	1354	1433			3994			50		C 4.3						
HOLL	18	1411E	1411U	1439	S14	E17	3994	11	19.9	28D	SN		2	C		85		ZF
RAMY	18	1543	1652	1657D	S10	E17	3994	11	19.9	74D	SN		3	C		52		K
RAMY	18	1543	1653	1657D	S10	E17	3994	11	19.9	74D	SN	C 1.7	3	C		60		K
GOES	18	1741	1743	1748						7		C 1.5						
HOLL	18	1846	1855	1859	S11	E14	3994	11	19.8	13	SF		3	C		25		F
HOLL	18	1859	1903	1905D	S07	W54	3990	11	14.7	6D	SF		2	C		19		
GOES	18	2004	2005	2010						6		C 1.5						
HOLL	18	2115	2127	2142	S10	E14	3994	11	19.9	27	SN	C 6.4	3	C		91		F
GOES	19	0118	0135	0140						22		C 1.8						
GOES	19	0150	0211	0227						37		C 3.0						
GOES	19	0251	0259	0259						8		C 4.2						
LEAR	19	0455	0459	0514	S10	W58	3987	11	14.8	19	SN	C 2.3	3	C		103		F
LEAR	19	0602	0612	0626	S14	E10	3994	11	20.0	24	SN		3	C		26		F
LEAR	19	0726	0736	0815	S15	E16	3994	11	20.5	49	1B	M 1.1	3	C		205		U
PEKG	19	0729E	0731	0807	S15	E15		11	20.4	38D	SN			P	0731	130	1.5	FK
PEKG	19	0729E	0740	0807	S15	E16		11	20.5	38D	1N			P	0740	202	2.3	FU
LEAR	19	0817	0819	0839	S15	E11	3994	11	20.2	22	SN		3	C		88		F
LEAR	19	0906	0910	0917	S10	W59	3987	11	14.9	11	SF		3	C		60		
LEAR	19	0919	0919	0928	N11	E72	3998	11	24.8	9	SF		3	C		15		
GOES	19	0928	0936	0944			3987			16		C 5.8						

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							NOAA/	CMP			Imp				Area Measurement			
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	USAF Region	Mo	Day	Dur (M'	Opt	Xray	See	Obs Type	Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
LEAR	19	0931	0932U	0932D	S13	W53	3987	11	15.4		-		3	C		56		F
GOES	19	1151	1154	1156						5		C 2.0						
GOES	19	1309	1312	1314						5		C 2.2						
RAMY	19	1350	1351	1402	S10	E05	3994	11	20.0	12	SF	C 2.4	3	C		37		K
RAMY	19	1350	1352	1409D	N13	E69	3998	11	24.8	19D	SF		3	C		64		
RAMY	19	1350	1401	1402	S10	E05	3994	11	20.0	12	SF		3	C		22		K
HOLL	19	1443	1505	1550	S09	W00	3994	11	19.6	67	SF		3	C		79		
HOLL	19	1453	1527	1551	N11	E67	3998	11	24.7	58	SN		3	C		24		
HOLL	19	1535	1603	1604	S10	W62	3987	11	15.0	29	SF	C 2.3	3	C		28		F
HOLL	19	1626	1632	1643	S09	E00	3994	11	19.7	17	SN		3	C		41		F
HOLL	19	1652	1656	1723	N11	E67	3998	11	24.7	31	SF		3	C		48		
HOLL	19	1710	1712	1752	S05	E57	3997	11	24.0	42	SN	C 1.4	3	C		70		
RAMY	19	1713	1713	1747	S03	E57	3997	11	24.0	34	SF		3	C		53		
HOLL	19	1753	1754	1802	S09	W00	3994	11	19.7	9	SB	C 2.0	3	C		103		E
HOLL	19	1806	1823	1842	N11	E66	3998	11	24.7	36	SF		3	C		37		
RAMY	19	1807	1828	1839	N12	E62	3998	11	24.4	32	SF		3	C		53		
RAMY	19	1836	1836	1852	S09	W01	3994	11	19.7	16	1F		3	C		295		
GOES	19	1909	1912	1915						6		C 1.5						
GOES	19	2030	2033	2035						5		C 1.8						
HOLL	19	2102E	2104U	2138	S08	E54	3997	11	23.9	36D	SF		3	C		27		F
GOES	19	2116	2136	2150						34		C 3.7						
HOLL	19	2156	2158	2205	S09	W04	3994	11	19.6	9	SF		3	C		28		F
HOLL	19	2240	2254	2302	S12	E00	3994	11	19.9	22	SN		3	C		100		F
GOES	19	2316	2321	2324						8		C 2.2						
GOES	20	0022	0037	0047						25		C 2.6						
LEAR	20	0055	0057	0108	S12	W66	3987	11	15.1	13	SF		3	C		17		
GOES	20	0201	0222	0240						39		M 1.1						
LEAR	20	0256	0256	0300	S06	E52	3997	11	24.0	4	SF		3	C		18		
LEAR	20	0338	0340	0402	S12	W65	3987	11	15.3	24	SF		3	C		32		F
LEAR	20	0526	0530	0544	S24	E89	4000	11	27.1	18	SB	M 2.0	3	C				
GOES	20	0802	0805	0807						5		C 2.1						
LEAR	20	0832	0837	0857	S09	W09	3994	11	19.7	25	SN	C 2.4	3	C		141		F
GOES	20	1007	1015	1033			3994			26		M 1.3						
RAMY	20	1219	1230	1302	S14	W09	3994	11	19.8	43	SF		3	C		34		
GOES	20	1316	1318	1323						7		C 1.4						
GOES	20	1327	1330	1332						5		C 1.5						
GOES	20	1428	1434	1500						32		C 3.6						
RAMY	20	1554	1706	1937	S09	W13	3994	11	19.7	223	SB		3	C		192		K
RAMY	20	1554	1708	1937	S09	W13	3994	11	19.7	223	1B	C 2.4	3	C		239		K
HOLL	20	1603	1606	1623	S08	W13	3994	11	19.7	20	SF		3	C		51		F
HOLL	20	1627	1628	1633	N11	W03		11	20.5	6	SF		3	C		29		
HOLL	20	1628	1641	1651	S09	W14	3994	11	19.6	23	SN		3	C		50		F
HOLL	20	1653	1701	1732	S08	W14	3994	11	19.7	39	SB	C 5.4	3	C		184		E
HOLL	20	1655	1657	1704	N11	W04		11	20.4	9	SF		3	C		45		
HOLL	20	1736	1739	1744	S09	W13	3994	11	19.8	8	SF		3	C		38		F
HOLL	20	1808	1834	2349D	S11	W09	3994	11	20.1	341D	SN		3	C		106		K
GOES	20	1808	1853	1854			3994			46		C 3.1						
HOLL	20	1808	2211	2349D	S11	W09	3994	11	20.1	341D	2B		3	C		268		UEK
HOLL	20	1834	1840	1843	N10	E46	3998	11	24.2	9	SF		3	C		40		
HOLL	20	1902	1903	1912	N11	W05	4001	11	20.4	10	SF		3	C		26		
RAMY	20	1925	1938	1957D	N10	W06		11	20.4	32D	SN		3	C		53		
HOLL	20	1927	1943	1949	N11	W06	4001	11	20.4	22	SN		3	C		31		
GOES	20	2010	2211	2244			3994			154		C 8.2						
HOLL	20	2054	2100	2122	S10	E37	3997	11	23.7	28	1B		3	C		207		E
HOLL	20	2116	2117	2124	N11	W07	4001	11	20.4	8	SF		3	C		50		
HOLL	20	2158	2202	2208	N11	W07	4001	11	20.4	10	SF		3	C		24		
HOLL	20	2205	2207	2212	S26	E79	4000	11	27.1	7	SF		3	C				
LEAR	20	2244E	2259U	2346	S10	W12	3994	11	20.0	62D	SN		3	C		194		F
LEAR	20	2301	2303	2317	N12	W07	4001	11	20.4	16	SF		3	C		28		
LEAR	21	0041	0046	0200	S10	W18	3994	11	19.7	79	SN		3	C		97		K
LEAR	21	0041	0136	0200	S10	W18	3994	11	19.7	79	SN		3	C		93		F K
LEAR	21	0106	0106	0114	S23	E75	4000	11	26.8	8	SF		3	C				H
LEAR	21	0201	0205	0208	S09	W18	3994	11	19.7	7	SN		3	C		74		F
LEAR	21	0339	0347	0409	S12	W81	3987	11	15.0	30	SF		3	C				F
LEAR	21	0340	0349	0408	S09	W19	3994	11	19.7	28	SN	C 7.3	3	C		73		F
LEAR	21	0422	0424	0435	S07	W19	3994	11	19.8	13	SN	C 6.3	3	C		58		F
LEAR	21	0423	0423	0427	S23	E73	4000	11	26.8	4	SF		3	C				
LEAR	21	0449	0453	0505	S11	W13	3994	11	20.2	16	SN	C 6.1	3	C		83		F
LEAR	21	0605	0626	0709	S11	W79	3987	11	15.3	64	SN	M 1.5	3	C				

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	21	0608	0609	0629	S07	W21	3994	11	19.7	21	SB		3	C		24		E
GOES	21	0921	0927	0931						10		M 1.0						
GOES	21	1017	1022	1044						27		M 1.9						
WEND	21	1018	1020	1027	S09	W23		11	19.7	9	SB			C	1020	31	.4	
WEND	21	1121	1127	1141	S08	W25		11	19.6	20	SN			C	1127	19	.2	
RAMY	21	1137	1419	1625	S10	W25	3994	11	19.6	288	2B	M 1.1	3	C		524		UFK
RAMY	21	1154	1155	1247	N11	W15	4001	11	20.4	53	SN	C 3.6	3	C		84		
GOES	21	1414	1420	1434			3994			20		M 2.8						
RAMY	21	1443	1502	1537	N10	W16	4001	11	20.4	54	SN		3	C		70		UF
HOLL	21	1454E	1505	1511	N11	W16	4001	11	20.4	17D	SF		1	C		28		F
HOLL	21	1521	1522	1527	N11	W17	4001	11	20.4	6	SF		2	C		54		F
RAMY	21	1617	1618	1628	N11	W17	4001	11	20.4	11	SN		3	C		31		
HOLL	21	1628	1650	1711	S07	W27	3994	11	19.7	43	SN		3	C		49		FH
RAMY	21	1631	1651	1700	S10	W14	3994	11	20.6	29	SB		3	C		33		
HOLL	21	1738	1745	1835	S07	W28	3994	11	19.6	57	SB	C 5.0	3	C		95		E K
HOLL	21	1738	1755	1835	S07	W28	3994	11	19.6	57	SN		3	C		107		K
RAMY	21	1741	1745	1811	S11	W26	3994	11	19.8	30	SB		3	C		52		
RAMY	21	1805	1807	1807D	N11	W19	4001	11	20.3	2D	SB		3	C		42		
HOLL	21	1805	1809	1809D	N12	W17	4001	11	20.5	4D	SB		3	C		84		E
HOLL	21	1813	1815	1820	S09	E26	3997	11	23.7	7	SN		3	C		106		F
HOLL	21	1813	1816	1818	S11	W76	3987	11	16.0	5	SF		3	C				
RAMY	21	1816	1843	1908	S08	W28	3994	11	19.7	52	SB		3	C		114		
HOLL	21	1838	1845	1919	S07	W27	3994	11	19.8	41	1B	C 8.6	3	C		480		E
HOLL	21	1840	1841	1847	N12	W18	4001	11	20.4	7	SF		3	C		28		
RAMY	21	1941	1943	2010	S11	W24	3994	11	20.0	29	SB	C 5.8	3	C		93		
HOLL	21	1942	1943	1951	S06	W27	3994	11	19.8	9	SN		3	C		51		F
GOES	21	2034	2041	2045			3994			11		C 2.9						
GOES	21	2131	2136	2139			3994			8		C 4.7						
LEAR	21	2318	2319	2324	N13	W65		11	17.1	6	SF	C 3.7	3	C		20		
LEAR	22	0012	0019	0032	N11	W23	4001	11	20.3	20	SF	C 3.9	3	C		37		
LEAR	22	0121	0132	0159	N11	W23	4001	11	20.3	38	SF	C 4.8	3	C		81		F K
LEAR	22	0121	0151	0159	N11	W23	4001	11	20.3	38	SF		3	C		66		K
LEAR	22	0212	0219	0233	N08	W70		11	16.8	21	SF		3	C		28		
LEAR	22	0325	0328	0337	S14	W30	3994	11	19.9	12	SN		3	C		21		
LEAR	22	0347	0347	0351	S24	E61	4000	11	26.9	4	SF		3	C		22		
GOES	22	0431	0436	0439						8		C 3.8						
GOES	22	0447	0449	0453			3994			6		C 5.0						
LEAR	22	0451	0451	0500	S07	W35	3994	11	19.6	9	SB		3	C		44		FE
GOES	22	0541	0545	0549						8		C 3.1						
LEAR	22	0608	0608	0613	S07	W36	3994	11	19.6	5	SN		3	C		34		F
PEKG	22	0624	0633	0633D	N13	W28		11	20.2	9D	SN			P	0633	42	.5	D
LEAR	22	0631	0637	0644	N12	W27	4001	11	20.2	13	SF		3	C		27		
GOES	22	0702	0724	0726						24		C 7.6						
LEAR	22	0747	0749	0754	N12	E29	3998	11	24.5	7	SF		3	C		27		
LEAR	22	0822	0822	0832	N11	W69		11	17.2	10	SF		3	C		11		
LEAR	22	0857	0905	0917D	S10	W32	3994	11	20.0	20D	SF		3	C		28		
GOES	22	0924	0927	0929						5		C 3.8						
GOES	22	0933	0936	0938						5		C 3.6						
WEND	22	0945	0959	1022	N13	W26		11	20.4	37	SF			C	0959	88	1.0	
GOES	22	1016	1023	1027						11		M 2.3						
GOES	22	1140	1147	1149						9		C 8.7						
WEND	22	1141	1141	1147	S09	W33		11	20.0	6	SB			C	1141	25	.3	Z
WEND	22	1208	1210	1214	S09	W33		11	20.0	6	SN			C	1210	19	.2	
RAMY	22	1224	1226	1231	S10	W33	3994	11	20.0	7	SB	M 2.0	3	C		67		
GOES	22	1328	1335	1337						9		C 7.5						
HOLL	22	1422E	1443	1443D	N14	W27	4001	11	20.6	21D	SB		3	C		81		
RAMY	22	1432	1441	1515	N11	W30	4001	11	20.3	43	SB		3	C		60		
HOLL	22	1454	1506	1626D	S11	W35	3994	11	20.0	92D	SN		3	C		100		K
HOLL	22	1454	1620	1626D	S11	W35	3994	11	20.0	92D	SB		3	C		135		ZEK
RAMY	22	1514	1817	1826D	S11	W36	3994	11	19.9	192D	1N		3	C		323		F
GOES	22	1632	1817	1826			3994			114		M 1.8						
GOES	22	1741	1817	1848			3994			67		M 4.7						
GOES	22	1741	1828	2020			3994			159		M 7.3						
GOES	22	2343	2346	2350						7		M 2.2						
PEKG	23	0128	0133	0137	S09	W45		11	19.7	9	SN			P	0133	34	.5	D
PEKG	23	0221	0223	0229	S09	W45		11	19.7	8	SN			C	0223	59	.9	E
GOES	23	0221	0224	0232			3994			11		M 1.8						
GOES	23	0315	0318	0320						5		M 1.1						
PEKG	23	0317	0318	0319	S10	W43		11	19.9	2	SN			P	0318	55	.8	E

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							NOAA/								Area Measurement			
Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Time (UT)	Apparent (10^{-6} Disk)	Corr (Sq Deg)	Remarks
GOES	23	0628	0631	0636						8		C 6.9						
ISTA	23	0710E		0720	S04	W51		11	19.5	10D	SF							D
GOES	23	0806	0807	0812						6		M 1.1						
LEAR	23	0821	0826	0829	N13	W82	4003	11	17.2	8	SF		3	C				
GOES	23	0919	0927	0937						18		C 6.7						
GOES	23	1116	1120	1126						10		M 1.2						
GOES	23	1221	1223	1226						5		C 6.2						
GOES	23	1317	1320	1322			3994			5		C 7.0						
GOES	23	1344	1347	1351						7		M 1.2						
GOES	23	1451	1454	1456						5		M 1.0						
GOES	23	1856	1901	1903						7		C 2.9						
GOES	23	1940	1944	1952						12		C 5.0						
GOES	23	2323	2325	2329						6		C 2.4						
LEAR	23	2359	0001	0004	S11	W55	3994	11	19.9	5	SB	C 4.4	3	C		79		E
LEAR	24	0113	0117	0131	S09	W58	3994	11	19.7	18	SN		3	C		27		FH
LEAR	24	0116	0117	0123	N11	W50	4001	11	20.3	7	SF		3	C		23		
LEAR	24	0205E	0205U	0210	S24	E34	4000	11	26.7	5D	SF		3	C		37		F
LEAR	24	0227	0231	0232	S08	W61	3994	11	19.5	5	SN		3	C		24		
LEAR	24	0312	0313	0319	N11	W52	4001	11	20.2	7	SF		3	C		23		
PEKG	24	0352	0357	0401	S12	W59		11	19.7	9	SN			C	0357	46	1.0	D
LEAR	24	0444	0446	0504	S17	W64	3994	11	19.3	20	SN	C 5.0	3	C		54		F
PEKG	24	0449	0454	0503	S14	W62		11	19.5	14	SN			P	0454	76	1.8	E
LEAR	24	0533	0533	0540	S28	E33	4000	11	26.8	7	SF		3	C		23		F
PEKG	24	0549	0556	0607	S10	W52		11	20.3	18	SN			P	0556	59	1.0	E
LEAR	24	0550	0553	0600D	N09	W52	4001	11	20.3	10D	SN		3	C		26		
PEKG	24	0555	0556	0559	S09	W62		11	19.6	4	SN			P	0556	34	.7	D
GOES	24	0705	0708	0712						7		C 3.4						
GOES	24	0915	0923	0938						23		C 3.9						
GOES	24	1426	1436	1442						16		C 2.8						
GOES	24	1539	1557	1558						19		C 3.0						
RAMY	24	1704	1706	1855	S11	W62	3994	11	20.0	111	SN		3	C		23		
GOES	24	1805	1826	1828			4001			23		C 3.4						
RAMY	24	1810	1810	1822	N11	W58	4001	11	20.4	12	SF		3	C		27		
RAMY	24	1835	1843	1850	N11	W60	4001	11	20.3	15	SF		3	C		32		
RAMY	24	1858	1907	1910D	S24	E24	4000	11	26.6	12D	SN		3	C		24		
GOES	24	1942	1947	1951						9		C 7.2						
GOES	24	2126	2128	2132			3994			6		M 2.1						
LEAR	24	2244	2244	2251	S27	E23	4000	11	26.7	7	SF		3	C		22		F
LEAR	24	2304	2304	2310	S10	W70	3994	11	19.7	6	SF	C 5.9	3	C		12		
LEAR	24	2305	2306	2323	N11	W07	3998	11	24.4	18	SN		3	C		41		
LEAR	25	0020	0022	0032	S11	W71	3994	11	19.7	12	SN	C 8.6	3	C				
LEAR	25	0038	0038	0048	S24	E22	4000	11	26.7	10	SF		3	C		36		F
LEAR	25	0125	0126	0134	S11	W72	3994	11	19.6	9	SB	M 1.3	3	C				FE
PEKG	25	0214E	0214	0220D	N12	W79		11	19.1	6D	1N			P	0214	76		E
LEAR	25	0305	0310	0314	N11	W60	4001	11	20.6	9	SF		3	C		23		F
LEAR	25	0327	0328	0339	S10	W67	3994	11	20.1	12	SN		3	C		20		
LEAR	25	0337	0340	0353	S25	E21	4000	11	26.8	16	SF		3	C		31		F
LEAR	25	0415	0416	0435	S10	W75	3994	11	19.5	20	1B	M 2.4	3	C				FE
PEKG	25	0415E	0417U	0424	S10	W76		11	19.5	9D	1N			P	0417	84		E
LEAR	25	0515	0515	0518	S12	W73	3994	11	19.7	3	SF		3	C				
GOES	25	0605	0609	0612			4001			7		C 2.5						
LEAR	25	0611	0613	0621	N11	W66	4001	11	20.3	10	SF		3	C		16		
GOES	25	0629	0633	0637						8		C 4.1						
LEAR	25	0714	0728	0748	S24	E19	4000	11	26.8	34	1N	C 3.8	3	C		204		F
GOES	25	0806	0812	0817						11		M 1.2						
GOES	25	1112	1117	1124						12		C 2.9						
GOES	25	1220	1223	1225						5		C 2.9						
GOES	25	1528	1531	1534						6		C 2.0						
GOES	25	1625	1629	1641						16		C 1.8						
GOES	25	1745	1749	1751						6		C 1.9						
GOES	25	1819	1820	1827						8		C 1.8						
GOES	25	1906	1909	1915						9		C 2.0						
GOES	25	1954	1957	2000						6		C 1.9						
GOES	25	2002	2008	2011						9		C 2.7						
GOES	25	2040	2051	2053						13		C 2.5						
GOES	25	2339	2347	2349						10		C 3.9						
GOES	26	0012	0016	0027						15		C 2.6						
GOES	26	0107	0111	0114						7		C 3.1						

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Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
LEAR	26	0207	0213	0225	N10	W75	4001	11	20.4	18	SN		3	C				F
PEKG	26	0214E	0214	0220D	N12	W79		11	20.1	6D	1N			P	0214	76		E
LEAR	26	0230	0236	0408	S12	W84	3994	11	19.8	98	SN	X 4.5	3	C				UF
PEKG	26	0232	0254	0425	S10	W88		11	19.5	113	1N			C	0254	84		EK
PEKG	26	0232	0315U	0425	S11	W89		11	19.4	113	2B			C	0315	181		E
LEAR	26	0319	0321	0332	S22	E09	4000	11	26.8	13	SF		3	C		88		F
LEAR	26	0447	0448	0507D	S27	E09	4000	11	26.9	20D	SN		3	C		40		F
GOES	26	1356	1359	1402						6		C 7.0						
GOES	26	1505	1508	1512						7		M 1.1						
RAMY	26	1534	1535	1551	N09	W26	3998	11	24.7	17	SF		3	C		29		
GOES	26	1608	1612	1616						8		M 2.7						
RAMY	26	1630	1630	1651D	S31	E03		11	26.9	21D	SF		3	C		42		
GOES	26	1758	1801	1803						5		C 4.8						
GOES	26	1926	1943	1944						18		M 2.0						
RAMY	26	2038	2049	2049D	S26	W13	4000	11	25.8	11D	1F	C 8.0	3	C		409		
RAMY	26	2052	2052	2103D	S26	W08	4000	11	26.2	11D	1F		3	C		388		
LEAR	27	0208	0209	0229	S08	E71	4005	12	2.4	21	SF	C 2.5	3	C		32		F
GOES	27	0448	0457	0503						15		C 2.6						
GOES	27	0725	0730	0734						9		C 2.1						
GOES	27	0934	0938	0958						24		C 3.1						
GOES	27	1311	1320	1320						9		C 2.2						
GOES	27	1445	1459	1525			4005			40		C 6.1						
GOES	27	2100	2103	2108			4007			8		C 2.4						
HOLL	27	2216	2220	2236D	S14	E43	4007	12	1.2	20D	SF	C 2.9	3	C		34		F
GOES	27	2308	2322	2325			3994			17		C 1.8						
LEAR	27	2353	2353	0005	S13	E44	4007	12	1.3	12	SN		3	C		21		F
GOES	28	0146	0153	0201						15		C 2.8						
LEAR	28	0317	0321	0342	S14	E40	4007	12	1.2	25	SN	C 2.2	3	C		42		F
LEAR	28	0402	0404	0450	S14	E43	4007	12	1.4	48	SB	C 7.4	3	C		150		FE
GOES	28	0517	0525	0534			4007			17		C 9.8						
LEAR	28	0528E	0528U	0545	S13	E39	4007	12	1.2	17D	SB		3	C		104		FE
LEAR	28	0558	0602	0609	S11	E58	4005	12	2.6	11	SN	C 1.8	3	C		32		
LEAR	28	0559	0602	0634	S13	E39	4007	12	1.2	35	SF		3	C		42		
LEAR	28	0726	0738	0750	S13	E38	4007	12	1.2	24	SF		3	C		39		
LEAR	28	0815	0827	0900	S23	W21	4000	11	26.7	45	SF	C 2.1	3	C		180		F
LEAR	28	0918	0918	0929	S11	E56	4005	12	2.6	11	SF	C 1.5	3	C		19		
GOES	28	0959	1009	1015						16		C 3.3						
GOES	28	1002	1009	1013						11		C 3.3						
GOES	28	1030	1033	1035						5		C 2.2						
GOES	28	1235	1238	1244						9		C 1.8						
HOLL	28	1448	1448	1457	S23	W24	4000	11	26.8	9	SF		3	C		23		F
RAMY	28	1448	1450	1454	S14	E35	4007	12	1.3	6	SN	C 2.1	3	C		33		
RAMY	28	1455	1457	1506	S13	E35	4007	12	1.3	11	SN		3	C		30		
HOLL	28	1633	1718	1735	S14	E32	4007	12	1.1	62	SB	C 2.0	3	C		104		E
HOLL	28	1638	1646	1751	N14	W54	3998	11	24.6	73	SN	C 3.6	3	C		73		F
RAMY	28	1639	1709	1740	N14	W55	3998	11	24.5	61	SF		3	C		78		F
HOLL	28	1746	1746	1750	S14	E35	4007	12	1.4	4	SN		3	C		30		F
HOLL	28	1829	1829	1837	S23	W26	4000	11	26.8	8	SN		3	C		22		F
RAMY	28	1901E		1903D	S12	E32	4007	12	1.2	2D	SF		3	C		32		
GOES	28	1902	1907	1913						11		C 1.2						
GOES	28	1931	1935	1940						9		C 1.5						
GOES	28	1957	2009	2037			4005			40		C 4.8						
HOLL	28	2016	2048	2238	S12	E50	4005	12	2.6	142	SB		3	C		97		E K
HOLL	28	2016	2156	2238	S12	E50	4005	12	2.6	142	SN		3	C		40		K
HOLL	28	2207	2221	2231	S14	E31	4007	12	1.3	24	SN		3	C		44		F
LEAR	28	2242	2242	2256	S24	W28	4000	11	26.8	14	SF		3	C		22		
LEAR	28	2306	2307	2345	S14	E30	4007	12	1.2	39	SB	C 2.7	3	C		49		FE
LEAR	28	2344	2348	2354	S11	E49	4005	12	2.7	10	SF		3	C		35		
GOES	29	0009	0012	0017			4005			8		C 1.8						
LEAR	29	0013	0018	0023	S10	E47	4005	12	2.5	10	SN		3	C		25		F
GOES	29	0032	0036	0038						6		C 1.5						
LEAR	29	0126	0128	0135	S11	E46	4005	12	2.5	9	SF		3	C		30		
GOES	29	0134	0137	0139						5		C 2.5						
LEAR	29	0146	0146	0201	S11	E45	4005	12	2.5	15	SF		3	C		22		
PEKG	29	0158	0210	0223	S13	E27		12	1.1	25	SN			C	0210	67	.8	D
LEAR	29	0200	0202	0226	S14	E27	4007	12	1.1	26	SN	C 3.3	3	C		65		F
PEKG	29	0242	0302	0302D	S15	E32		12	1.5	20D	SN			P	0302	55	.7	D
GOES	29	0302	0305	0308						6		C 2.2						

H-ALPHA SOLAR FLARES

NOVEMBER 1982

Sta	Day	Start (UT)	Max (UT)	End (UT)	Lat	CMD	NOAA/ USAF Region	CMP Mo	CMP Day	Dur (Min)	Imp Opt	Imp Xray	See	Obs Type	Area Measurement Time (UT)	Area Measurement Apparent (10^{-6} Disk)	Area Measurement Corr (Sq Deg)	Remarks
PEKG	29	0430	0455	0510	S12	E47		12	2.7	40	SN			C	0455	76	1.2	E
LEAR	29	0440	0442	0502	S11	E47	4005	12	2.7	22	SF	C 1.4	3	C		39		
LEAR	29	0525	0526	0606	S23	W32	4000	11	26.8	41	SF		3	C		20		K
LEAR	29	0525	0539	0606	S23	W32	4000	11	26.8	41	SF	C 1.3	3	C		75		F K
PEKG	29	0545	0550	0600	S13	E25		12	1.1	15	SF			C	0550	50	.6	E
PEKG	29	0640	0656	0720	S16	E30		12	1.6	40	SF			C	0656	21	.3	D
GOES	29	0646	0653	0706						20		C 2.3						
GOES	29	0832	0835	0837						5		C 2.0						
GOES	29	0929	0932	0936						7		C 1.3						
GOES	29	1018	1021	1031						13		C 2.2						
HOLL	29	1411	1412	1437	N11	E90	4010	12	6.4	26	SN	C 8.6	2	C				
GOES	29	1656	1702	1703			4010			7		C 1.1						
GOES	29	1739	1751	1811						32		C 4.0						
GOES	29	1913	1916	1918						5		C 2.1						
GOES	29	2101	2105	2129			4007			28		C 2.4						
GOES	29	2134	2138	2142			4010			8		C 8.2						
GOES	29	2306	2309	2315						9		C 2.1						
GOES	29	2321	2343	0024						63		C 3.3						
LEAR	29	2323	2324	2356	S13	E32	4005	12	2.4	33	SN		3	C		55		F
LEAR	29	2335	2340	0019	S18	E24	4007	12	1.8	44	SF	C 3.2	3	C		112		F
LEAR	29	2359	0009	0028	S22	E34	4008	12	2.6	29	SF		3	C		102		F
PEKG	30	0043E	0043	0105	S15	E18		12	1.4	22D	SN			P	0043	176	2.0	F
PEKG	30	0046	0048	0109	S11	E35		12	2.7	23	1N			C	0048	168	2.2	F
LEAR	30	0047	0047	0055	S12	E35	4005	12	2.7	8	SF		3	C		65		
LEAR	30	0136	0139	0143	S09	E33	4005	12	2.5	7	SF		3	C		25		
GOES	30	0259	0300	0308						9		C 1.3						
GOES	30	0308	0311	0313						5		C 2.1						
LEAR	30	0319	0327	0350	S13	E15	4007	12	1.3	31	SF		3	C		82		F
LEAR	30	0412	0413	0422	S09	E32	4005	12	2.6	10	SN	C 2.3	3	C		83		F
LEAR	30	0446	0448	0459	S12	E12	4007	12	1.1	13	SF		3	C		94		F
LEAR	30	0552	0616	0713	S14	E14	4007	12	1.3	81	SF	C 1.2	2	C		138		F
GOES	30	0641	0651	0657						16		C 2.0						
LEAR	30	0725	0730	0739	S12	E10	4007	12	1.1	14	SN		3	C		54		F
GOES	30	0738	0743	0751			4010			13		C 3.1						
GOES	30	0837	0841	0847						10		C 4.8						
LEAR	30	0857	0859	0909	S14	E27	4005	12	2.4	12	SF		2	C		118		F
GOES	30	1205	1210	1216						11		C 2.3						
GOES	30	1540	1543	1545						5		C 1.9						
RAMY	30	1655	1711	1726	S10	E24	4005	12	2.5	31	SF		3	C		41		
RAMY	30	1742	1746	1800	S19	E11	4007	12	1.6	18	SF		3	C		102		U
GOES	30	1742	1801	1803			4007			21		C 1.2						
HOLL	30	1744	1746	1759	S20	E09	4007	12	1.4	15	SF		3	C		23		U
GOES	30	2236	2240	2248						12		C 1.0						
GOES	30	2323	2332	2344						21		C 2.1						
LEAR	30	2324	2327	0003	S12	E23	4005	12	2.7	39	SF		3	C		104		F

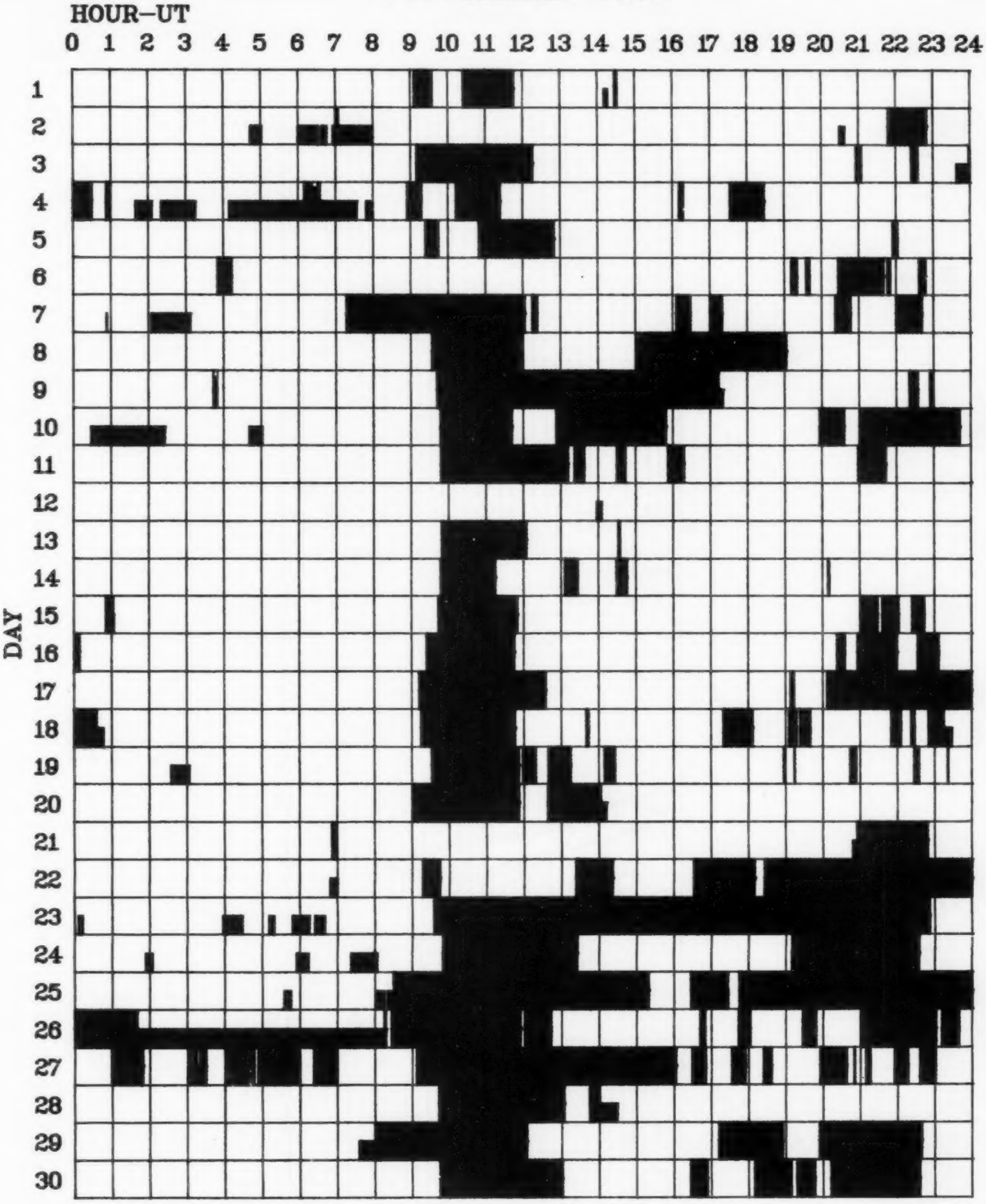
"Remarks":

A = Eruptive prominence whose base is less than 90° from central meridian.
B = Probably the end of a more important flare.
C = Invisible 10 minutes before.
D = Brilliant point.
E = Two or more brilliant points.
F = Several eruptive centers.
G = No visible spots in the neighborhood.
H = Flare accompanied by high-speed dark filament.
I = Active region very extended.
J = Distinct variations of plage intensity before or after the flare.
K = Several intensity maxima.
L = Existing filaments show signs of sudden activity.
M = White-light flare.
N = Continuous spectrum shows effects of polarization.
O = Observations have been made in the H and K lines of CaII.
P = Flare shows helium D3 in emission.
Q = Flare shows Balmer continuum in emission.
R = Marked asymmetry in H-alpha line suggests ejection of high-velocity material.
S = Brightness follows disappearance of filament in same position.
T = Region active all day.
U = Two bright branches, parallel or converging.
V = Occurrence of an explosive phase: important, expansion within roughly 1 minute that often includes a significant intensity increase.
W = Great increase in area after time of maximum intensity.
X = Unusually wide H-alpha line.
Y = System of loop-type prominences.
Z = Major sunspot umbra covered by flare.

INTERVALS OF NO FLARE PATROL OBSERVATION

FOR PRECEDING SOLAR FLARE TABLE

NOVEMBER 1982



Observatories included in total patrol:

Holloman
Istanbul
Kandilli
Learmonth
Palehua
Peking
Ramey
Wendelstein

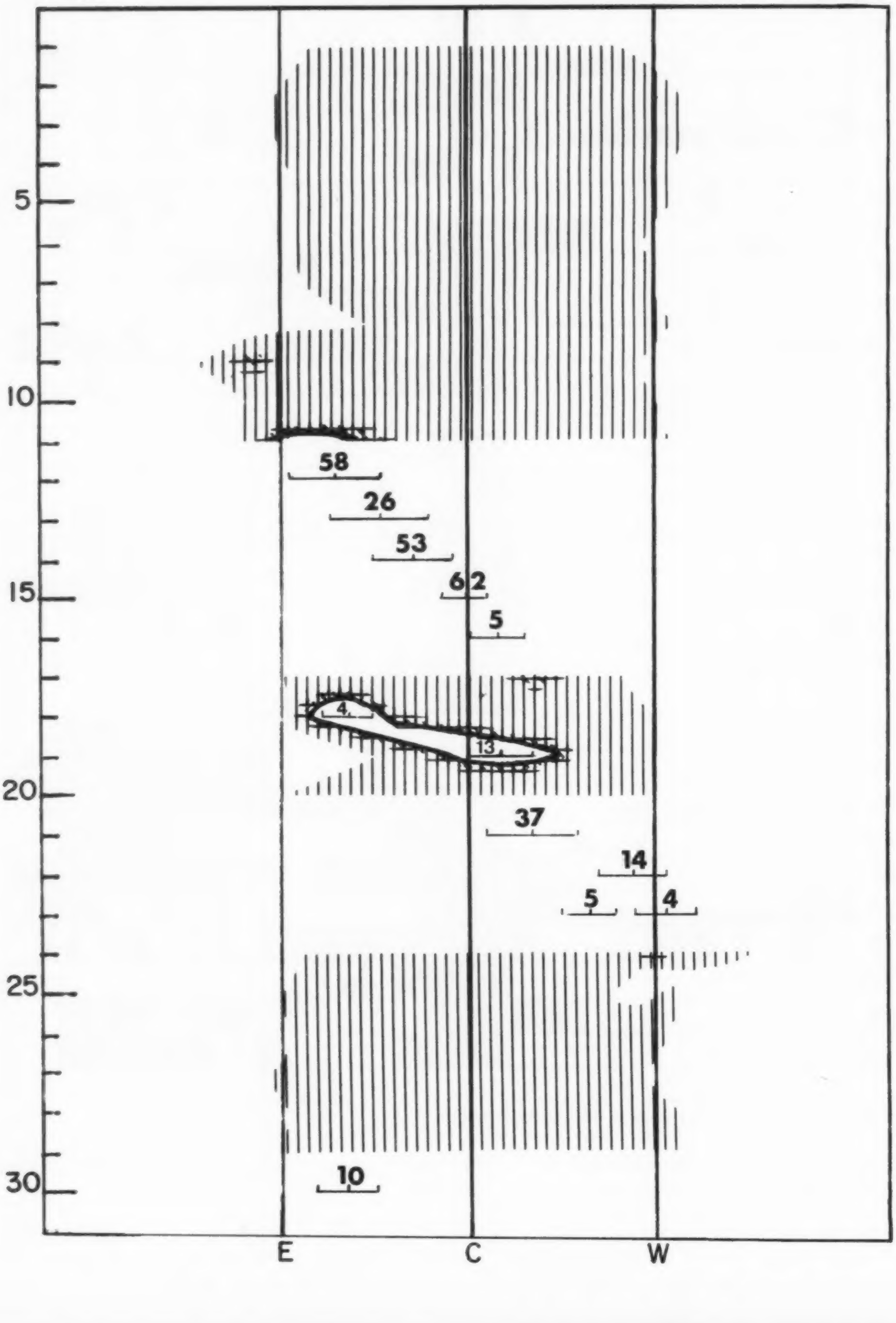
Times of no flare patrol are shown by the shaded area for each day divided into times of no cinematographic patrol (bottom half of day) and times of neither visual nor cinematographic patrol (top half of day).

28
Nov 82

SOLAR RADIO EMISSION
INTERFEROMETRIC OBSERVATION

NOVEMBER 1982

Nançay **169 MHz**

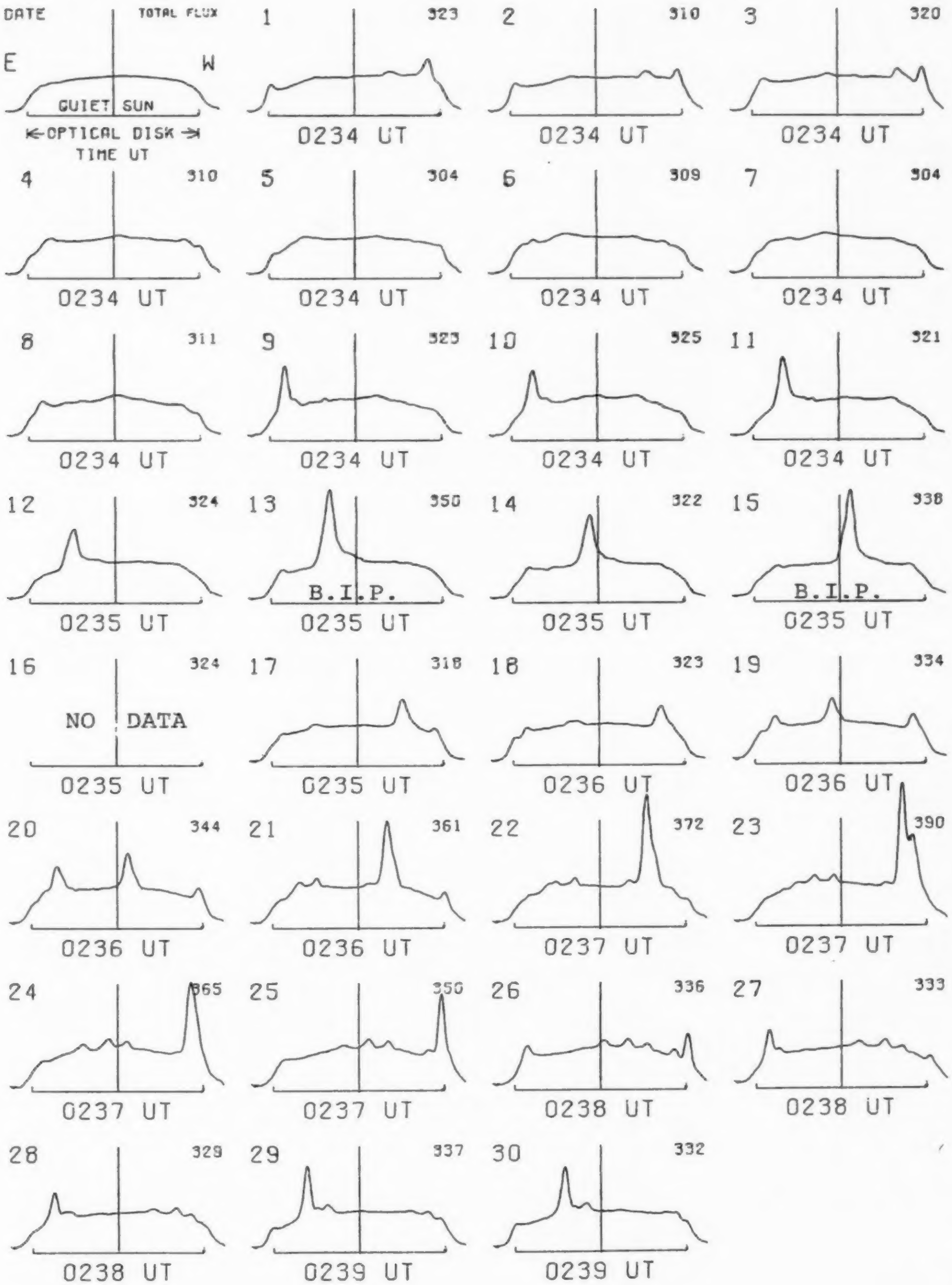


EAST-WEST SOLAR SCANS

NOVEMBER 1982

TOYOKAWA.JAPAN

3 CM
FAN BEAM WITH 1.1 MINUTES OF ARC

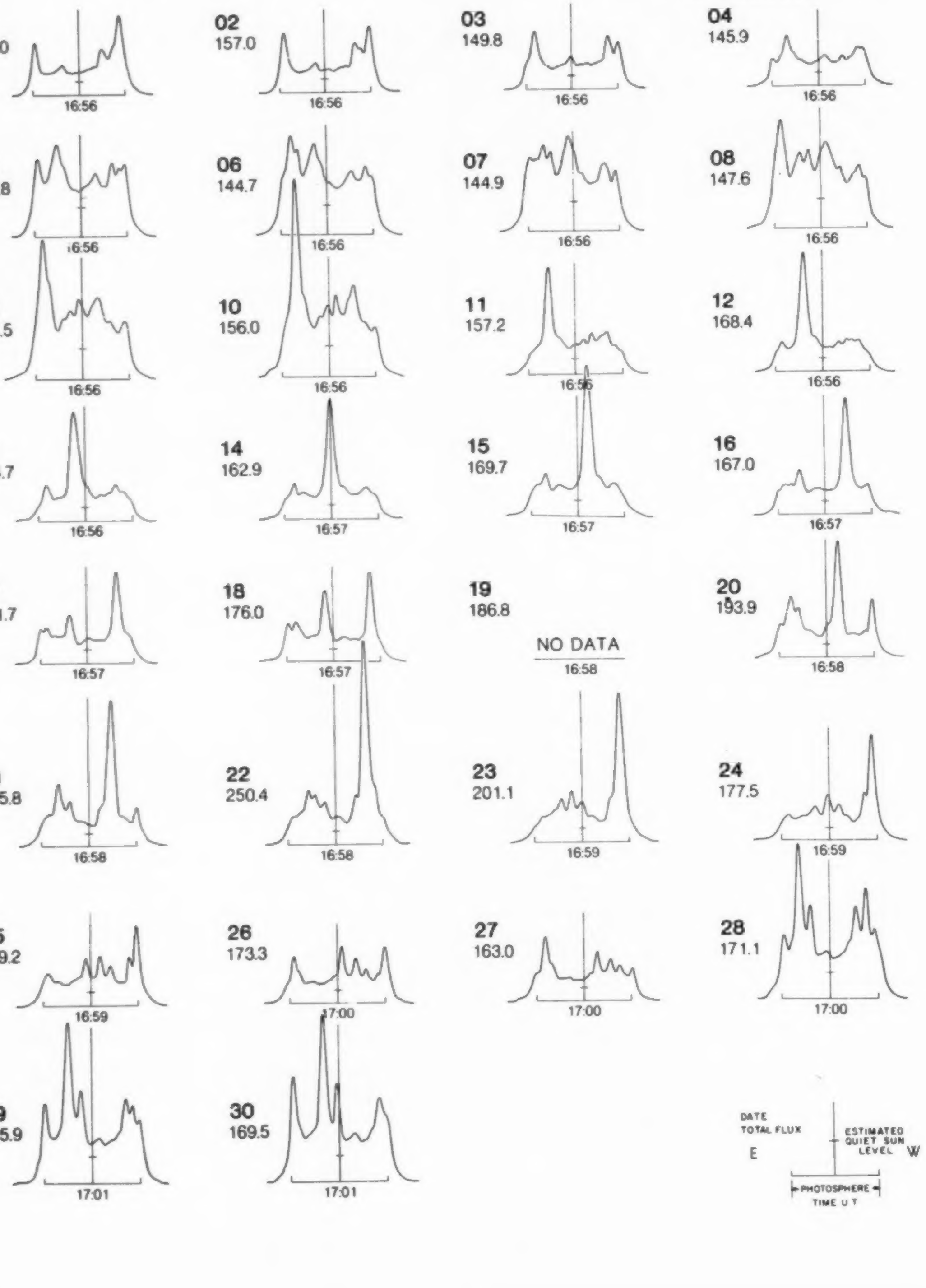


EAST-WEST SOLAR SCANS

NOVEMBER 1982

ALGONQUIN RADIO OBSERVATORY
CANADA

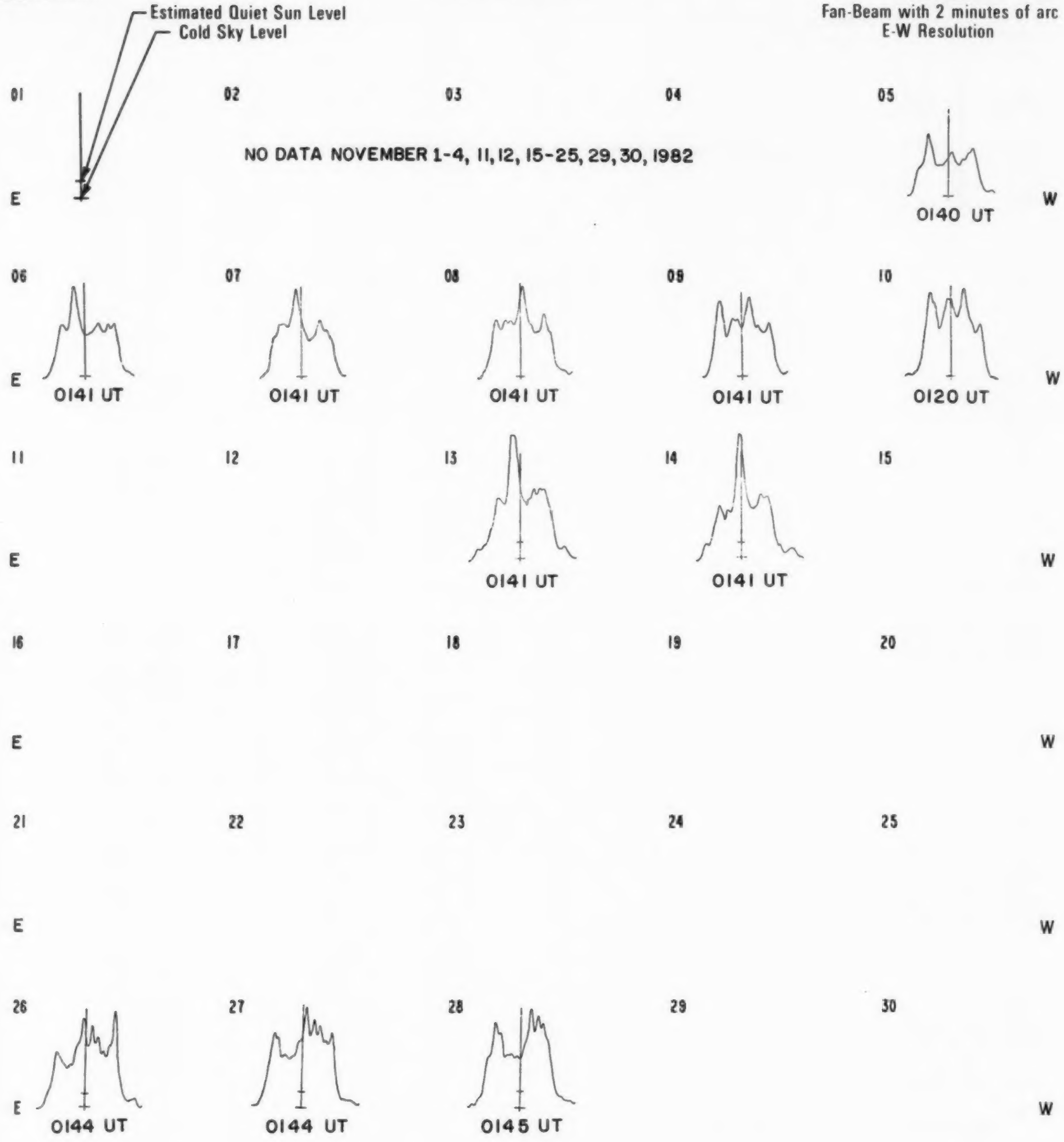
10·7 cm
Fan Beam with 1·5 minutes of arc
E-W Resolution



EAST-WEST SOLAR SCANS
NOVEMBER 1982

Fleurs, Australia

21 cm
Fan-Beam with 2 minutes of arc
E-W Resolution



NO DATA NOVEMBER 1-4, 11, 12, 15-25, 29, 30, 1982

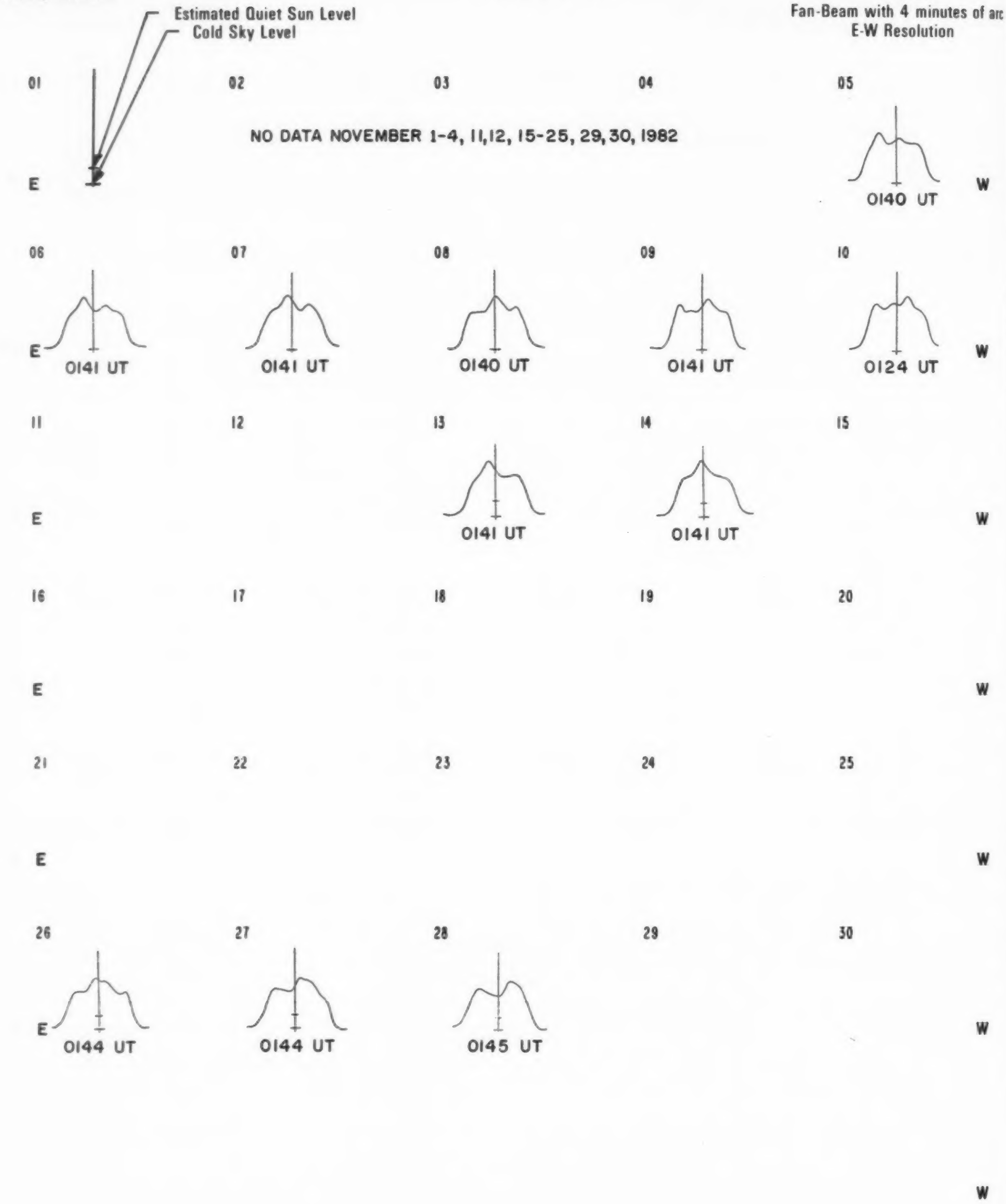
EAST-WEST SOLAR SOLAR SCANS

NOVEMBER 1982

Fleurs, Australia

43 cm
Fan-Beam with 4 minutes of arc
E-W Resolution

NO DATA NOVEMBER 1-4, 11,12, 15-25, 29,30, 1982



SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean	Int	Remarks
01	2695	LEAR	47	GB	0334.0	0335.6	17.6	74.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0334.1	0336.0	25.7	62.0			QL=6 ST=2 TYP=5
	2800	OTTA	2	S/F	1847.0	1848.0	7.0	3.2	1.5		
	2800	OTTA	20	GRF	2005.0	2020.0	70.0	3.2	2.3		
	2695	SGMR	47	GB	2014.1	2014.3	1.2	81.0			QL=6 ST=2 TYP=5
02	2695	LEAR	8	S	0012.3	0012.8	1.5	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0012.5	0012.6	1.6	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0914.3	0914.6	1.2	29.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0914.5	0914.6	1.0	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1706.0	1706.0	8.0	14.4	5.0		
	2800	OTTA	27A	RF	1730.0		195.0	2.8	2.6		
	2800	OTTA	24	R	1730.0	1735.0	5.0	2.8	1.4		
	2800	OTTA	24P	R	1735.0		175.0	2.8			
	2800	OTTA	1	S	1735.0	1737.0	4.0	2.4	1.2		
	2800	OTTA	26	FAL	2030.0	2045.0	15.0	-2.8	-1.4		
	2695	PENT	2	S/F	2201.9	2203.0	3.0	2.8	1.4		
03	8800	LEAR	4	S/F	0048.8	0050.3	2.8	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0349.6	0350.3	2.0	32.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0350.1	0350.3	1.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0710.3	0710.8	1.5	17.0			QL=6 ST=2 TYP=3
04	2800	OTTA	27	RF	1430.0		105.0	3.0	2.7		
	2800	OTTA	24	R	1430.0	1445.0	15.0	3.0	1.5		
	2800	OTTA	24P	R	1445.0		85.0	3.0			
	2800	OTTA	26	FAL	1610.0	1615.0	5.0	3.0	1.5		
	2800	OTTA	240	R	1645.0	1700.0	15.0	3.2	1.6		
	2800	OTTA	8	S	1943.8	1944.2	.8	2.0	1.0		
05	8800	ATHN	8	S	0741.1	0741.3	.9	31.0			QL=2 ST=2 TYP=3
08	2695	LEAR	8	S	0745.1	0745.6	1.2	7.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0745.3	0745.3	1.0	13.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1717.8	1718.1	2.3	78.0			QL=6 ST=2 TYP=5
	2800	OTTA	27A	RF	1810.0		200.0	2.4	2.2		
	2800	OTTA	24	R	1810.0	1835.0	25.0	2.4			
	2800	OTTA	24P	R	1835.0		165.0	2.4			
	2800	OTTA	20	GRF	2047.0	2050.0	15.0	15.0	0.8		
	2800	OTTA	26	FAL	2120.0	2130.0	10.0	-2.4	-1.5		
	2695	PENT	20	GRF	2150.0	2210.0	45.0	4.2	2.2		
09	2800	OTTA	8	S	1556.0	1556.3	.8	2.0	1.0		
10	8800	ATHN	8	S	0601.0	0601.5	1.0	28.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0601.1	0601.5	1.5	38.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0601.1	0601.5	1.4	27.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0601.3	0601.8	2.2	32.0			QL=2 ST=2 TYP=3
	8800	LEAR	8	S	0912.0	0912.1	1.1	20.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1448.0	1448.3	.6	4.2			
	2800	OTTA	42	SER	1448.0	1450.2	5.0	11.4			
	2800	OTTA	8	S	1450.0	1450.2	.8	11.4			
	2800	OTTA	1	S	1451.8	1452.3	1.2	2.0			
	2800	OTTA	46F	C	1755.0	1803.0	30.0	33.0	18.8		
	8800	SGMR	47	GB	1758.3	1802.0	34.0	71.0			QL=6 ST=2 TYP=5
	2695	SGMR	4	S/F	1759.1	1802.8	28.5	37.0			QL=6 ST=2 TYP=3
	2800	OTTA	29	PBI	1825.0	1825.0	150.0	15.4	5.2		
	8800	PALE	8	S	1921.3	1921.6	.8	21.0			QL=6 ST=2 TYP=3
11	8800	LEAR	8	S	0630.1	0630.1	1.0	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	240	R	1850.0	2015.0	85.0	8.2	3.8		
	8800	LEAR	4	S/F	2232.1	2234.1	2.9	13.0			QL=6 ST=2 TYP=3
12	8800	PALE	20	GRF	0000.1	0004.8	14.0	29.0			QL=6 ST=2 TYP=2
	8800	LEAR	20	GRF	0337.0	0407.5	76.0	36.0			QL=6 ST=2 TYP=2
	2695	LEAR	20	GRF	0337.0	0418.5	76.0	11.0			QL=6 ST=2 TYP=2
	2695	ATHN	47	GB	0539.8	0547.5	22.7	280.0			QL=2 ST=3 TYP=5
	8800	ATHN	4	S/F	0540.1	0548.0	11.0	32.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0819.1	0819.5	1.2	17.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0857.1	0857.3	1.0	13.0			QL=6 ST=2 TYP=3

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
12	2800	OTTA	2	S/F	1342.0	1343.0	4.0	9.0			
	2800	OTTA	23	GRF	1400.0	1438.0	180.0	34.0	11.4		
	2695	ATHN	47	GB	1425.6	1431.3	17.4	75.0			QL=2 ST=2 TYP=5
	8800	ATHN	47	GB	1425.6	1432.3	18.2	160.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1425.8	1432.1	17.3	219.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1428.8	1431.1	14.3	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	46F	C	1430.0	1431.3	7.5	85.0	10.9		
	2800	OTTA	2	S/F	1439.2	1439.8	2.0	7.4	3.7		
	8800	SGMR	20	GRF	1443.1	1443.1	26.9	59.0			QL=6 ST=2 TYP=2
	2695	SGMR	20	GRF	1443.1	1444.6	11.5	18.0			QL=6 ST=2 TYP=2
	2800	OTTA	46F	C	1444.5	1447.6	6.0	26.0	9.4		
	2800	OTTA	8	S	1548.7	1548.7	.1	7.2			
	2695	SGMR	8	S	1555.3	1556.1	1.0	13.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1710.0	1750.0	95.0	4.6	2.3		
	2800	OTTA	21	GRF	1855.0	1925.0	130.0	8.4	4.0		
	2800	OTTA	1	S	1857.5	1858.0	1.0	2.6	1.3		
	2695	PENT	20	GRF	2135.0	2150.0	30.0	3.0	1.5		
	8800	LEAR	8	S	2352.1	2352.8	1.7	10.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2352.5	2352.6	.6	17.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2357.0	2357.1	.3	20.0			QL=6 ST=3 TYP=3
	8800	PALE	20	GRF	2359.1	0004.8	15.0	29.0			QL=6 ST=2 TYP=2
13	8800	PALE	20	GRF	0000.1	0004.8		29.0			QL=6 ST=3 TYP=2
	8800	LEAR	4	S/F	0002.0	0011.0	15.5	20.0			QL=6 ST=3 TYP=3
	8800	PALE	8	S	0106.0	0107.3	1.5	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0232.0	0236.6	11.1	80.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0232.3	0233.0	18.2	23.0			QL=6 ST=2 TYP=5
	8800	PALE	8	S	0235.3	0235.5	.3	13.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0235.8	0236.3	4.3	69.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0315.1	0317.3	2.9	19.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0559.6	0609.6	19.4	29.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0600.1	0604.0	28.5	40.0			QL=6 ST=3 TYP=5
	2695	LEAR	4	S/F	0601.5	0607.8	24.3	16.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0813.8	0814.0	.3	11.0			QL=5 ST=2 TYP=3
	8800	ATHN	4	S/F	0824.8	0825.5	3.5	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0825.1	0825.3	1.2	30.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0912.0	0916.5	13.3	21.0			QL=5 ST=2 TYP=2
	8800	LEAR	8	S	0940.8	0941.6	1.8	21.0			QL=6 ST=3 TYP=3
	8800	ATHN	4	S/F	0940.8	0942.1	3.2	8.0			QL=6 ST=2 TYP=3
	8800	ATHN	47	GB	1413.6	1414.5	7.5	53.0			QL=6 ST=2 TYP=5
	2695	ATHN	4	S/F	1413.6	1414.5	6.0	31.0			QL=2 ST=2 TYP=3
	2800	OTTA	21	GRF	1420.0	1447.0	170.0D	18.8			
	2800	OTTA	4	S/F	1436.0	1437.7	7.0	21.6	9.0		
	2800	OTTA	20	GRF	1540.0	1545.0	25.0	3.2	1.6		
	2800	OTTA	21	GRF	1724.0	1725.0	20.0	2.0	1.0		
	2800	OTTA	1	S	1732.0	1732.5	4.0	3.8	1.2		
	2800	OTTA	20	GRF	1800.0	1810.0	30.0	2.0	1.0		
	2800	OTTA	20	GRF	1840.0	1855.0	70.0	5.6	2.8		
	2800	OTTA	22	GRF	2000.0	2050.0	120.0	4.4	2.2		
	8800	PALE	8	S	2258.1	2258.1	.5	27.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	2356.8	2357.8	2.0	26.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	2357.6	2357.8	1.2	5.0			QL=6 ST=2 TYP=3
14	8800	LEAR	4	S/F	0014.8	0017.8	40.2	42.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0015.0	0017.3	24.0	17.0			QL=6 ST=2 TYP=3
	8800	PALE	4	S/F	0016.3	0017.3	3.8	28.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	0031.3	0031.5	.5	39.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1800.0	1805.0	20.0	2.0	1.0		
	8800	PALE	8	S	1852.6	1852.6	.2	19.0			QL=6 ST=2 TYP=3
	2800	OTTA	21	GRF	1855.0	2005.0	125.0	6.0	2.8		
	2800	OTTA	40	F	1858.0	1903.8	11.0	16.8			
	8800	LEAR	8	S	2224.8	2225.1	.7	13.0			QL=5 ST=2 TYP=3
	8800	LEAR	4	S/F	2305.3	2306.8	2.8	13.0			QL=6 ST=2 TYP=3
15	8800	LEAR	49	GB	0156.6	0201.1	24.2	1000.0			QL=6 ST=2 TYP=6
	8800	PALE	49	GB	0157.3	0203.1	13.3	1199.0			QL=6 ST=2 TYP=6
	2695	LEAR	47	GB	0157.6	0201.3	23.2	420.0			QL=6 ST=2 TYP=5
	8800	PALE	4	S/F	0210.6	0221.3	18.7	33.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0342.1	0342.1	.5	43.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0840.1	0840.3	1.7	70.0			QL=6 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
15	2800	OTTA	1	S	1426.0	1427.0	2.0	4.0	1.4		
	2800	OTTA	4	S/F	1612.0	1616.5	18.0	36.0	15.0		
	8800	SGMR	47	GB	1616.0	1616.3	5.1	68.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1616.1	1618.0	5.0	62.0			QL=6 ST=2 TYP=5
	2800	OTTA	30	PBI	1630.0	1630.0	80.0	14.4	7.2		
	2800	OTTA	1	S	1648.0	1648.4	2.0	2.0	1.0		
	2800	OTTA	1	S	1651.0	1652.0	2.0	2.4	1.2		
	2800	OTTA	32	ABS	1825.0	1905.0	60.0	-4.0	-2.2		
	2800	OTTA	20	GRF	1834.0	1836.0	12.0	5.2	2.6		
	2695	SGMR	4	S/F	1922.8	1925.0	6.0	40.0			QL=6 ST=3 TYP=3
	2695	PENT	240	R	2200.0	2215.0	15.0	6.2	3.1		
16	8800	LEAR	8	S	0159.6	0200.6	2.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0306.8	0345.5	218.2	110.0			QL=5 ST=2 TYP=2
	2695	LEAR	20	GRF	0316.0	0404.0	104.0	30.0			QL=5 ST=2 TYP=2
	8800	LEAR	8	S	0818.6	0819.3	1.0	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0911.5	0912.3	1.0	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0959.1	0959.3	1.7	30.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1614.2	1614.5	1.0	3.2	1.6		
	2800	OTTA	21	GRF	2020.0	2047.0	140.0	10.0			
	2695	PENT	3	S	2110.0	2112.8	12.0	75.0	32.0		
	8800	PALE	47	GB	2110.6	2111.3	8.9	470.0			QL=6 ST=2 TYP=5
	2695	PENT	29	PBI	2122.0	2122.0	68.0	18.6	9.0		
17	8800	LEAR	4	S/F	0421.3	0423.8	4.0	17.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1035.6	1039.1	13.2	32.0			QL=2 ST=2 TYP=3
	8800	ATHN	4	S/F	1037.3	1044.8	13.3	21.0			QL=2 ST=2 TYP=3
	8800	ATHN	4	S/F	1133.8	1135.6	4.5	27.0			QL=2 ST=2 TYP=3
	8800	SGMR	47	GB	1356.3	1402.6	35.2	219.0			QL=6 ST=2 TYP=5
	8800	ATHN	47	GB	1357.3	1403.3	29.0	130.0			QL=2 ST=2 TYP=5
	2695	SGMR	4	S/F	1402.1	1402.8	21.5	30.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	1402.3	1403.3	24.0	23.0			QL=2 ST=2 TYP=3
	2800	OTTA			1417.0		95.0D	18.2			
18	2695	LEAR	4	S/F	0122.8	0123.6	4.3	20.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0123.1	0124.0	1.9	8.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0302.1	0303.8	1.9	15.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0453.8	0456.3	21.0	13.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0454.5	0500.3	20.5	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	240AR		1345.0	1350.0	35.0	7.0			
	2800	OTTA	4	S/F	1347.0	1352.5	13.0	27.0	16.2		
	2800	OTTA	29	PBI	1400.0	1400.0	49.0	12.4	6.2		
	2800	OTTA	20	GRF	1500.0	1545.0	140.0	5.0	2.0		
	2800	OTTA	20	GRF	1745.0	1835.0	145.0	5.2	2.6		
	2695	PENT	23	GRF	2050.0	2130.0	100.0	4.8	2.2		
	2695	PENT	3	S	2121.0	2122.5	9.0	38.0	9.4		
19	8800	LEAR	4	S/F	0726.8	0732.1	29.5	17.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0727.0	0731.1	9.6	26.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0731.1	0732.3	3.7	3.0			QL=2 ST=2 TYP=3
	2695	ATHN	4	S/F	0732.3	0733.6	6.7	13.0			QL=2 ST=2 TYP=3
	2695	LEAR	4	S/F	0817.6	0818.8	6.7	9.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0834.1	0834.3	.2	11.0			QL=6 ST=2 TYP=3
	2695	ATHN	4	S/F	0923.3	0933.6	15.7	13.0			QL=2 ST=3 TYP=3
	2695	LEAR	8	S	0932.3	0932.6	1.2	18.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1335.0	1350.0	105.0	6.8	3.8		
	8800	SGMR	8	S	1752.5	1752.6	1.3	39.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1752.6	1752.6	.4	31.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1835.0	1835.2	.6	3.8			
	2695	LEAR	8	S	2314.8	2315.8	1.5	6.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	2345.0	2345.6	3.3	31.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2345.5	2345.6	.6	20.0			QL=6 ST=2 TYP=3
20	8800	PALE	8	S	0129.0	0129.1	.3	11.0			QL=6 ST=2 TYP=3
	3800	LEAR	47	GB	0203.8	0214.0	25.5	69.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0204.8	0215.5	18.8	33.0			QL=6 ST=2 TYP=3
	8800	PALE	47	GB	0212.1	0213.6	5.0	58.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0529.1	0530.3	17.2	44.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	1011.0	1013.0	10.0	130.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	1011.1	1012.3	8.7	370.0			QL=5 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density		Int	Remarks
								Peak (10 -22 W/m 2 Hz)	Mean		
20	2695	ATHN	47	GB	1012.1E	1013.0	12.5D	160.0			QL=2 ST=3 TYP=5
	8800	ATHN	47	GB	1012.3E	1013.3	9.0D	239.0			QL=2 ST=3 TYP=5
	2800	OTTA	20	GRF	1425.0	1435.0	80.0	5.4	3.7		
	2800	OTTA	20	GRF	1703.0	1705.0	30.0	4.0	2.0		
	2800	OTTA	20	GRF	1855.0	1900.0	40.0	2.8	1.4		
	2695	PENT	240	R	2002.0	2006.0	4.0	3.2	1.4		
	2695	PENT	240	R	2037.0	2042.0	5.0	3.2	1.6		
	2695	PENT	1	S	2054.0	2058.0	10.0	3.8	1.9		
	2695	PENT			2150.0	2255.0	70.0D	52.0			
	8800	LEAR	47	GB	2212.3	2223.5	37.2	29.0			QL=5 ST=2 TYP=5
	2695	LEAR	4	S/F	2213.1	2224.0	25.9	24.0			QL=5 ST=2 TYP=3
	8800	PALE	4	S/F	2224.6	2225.1	2.5	28.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	2234.5	2235.5	2.0	42.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	2235.3	2235.3	41.0	59.0			QL=6 ST=3 TYP=5
	2695	LEAR	4	S/F	2239.0	2255.0	37.3	40.0			QL=6 ST=3 TYP=3
	8800	LEAR	4	S/F	2316.3	2316.8	28.2	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	2316.3	2321.5	28.2	40.0			QL=6 ST=3 TYP=3
	8800	PALE	47	GB	2338.8	2338.8		119.0			QL=6 ST=3 TYP=5
21	8800	PALE	8	S	0001.3	0001.5	.7	24.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0135.6	0136.3	.9	28.0			QL=6 ST=3 TYP=3
	8800	LEAR	4	S/F	0205.5	0207.6	6.3	15.0			QL=6 ST=2 TYP=3
	8800	ATHN	20	GRF	0558.3	0612.1	50.7	26.0			QL=2 ST=2 TYP=2
	2695	LEAR	47	GB	0603.1	0606.3	28.7	42.0			QL=6 ST=2 TYP=5
	2695	ATHN	20	GRF	0603.8	0616.1	37.3	50.0			QL=2 ST=2 TYP=2
	8800	LEAR	4	S/F	0608.3	0608.3	21.7	11.0			QL=5 ST=3 TYP=3
	8800	SGMR	47	GB	1308.6	1309.3	12.5	50.0			QL=6 ST=2 TYP=5
	8800	ATHN	4	S/F	1415.0	1419.3	17.5	46.0			QL=2 ST=2 TYP=3
	8800	SGMR	47	GB	1418.0	1418.5	9.8	20.0			QL=6 ST=2 TYP=5
	2800	OTTA	1	S	1418.5	1419.2	6.0	7.8	2.6		
	2800	OTTA	20	GRF	1430.0	1450.0	60.0	7.0	3.5		
	2800	OTTA	22	GRF	1625.0	1655.0	60.0	6.2	3.3		
	2800	OTTA	21	GRF	1735.0	1755.0	115.0	7.8	5.6		
	2800	OTTA	21	GRF	1835.0	1838.0	25.0	3.2			
	2800	OTTA	1	S	1841.5	1842.2	7.0	6.4	2.8		
	8800	PALE	8	S	1841.6	1842.1	1.0	39.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1842.1	1842.3	1.2	24.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1940.0	1945.0	35.0	3.8	2.0		
	8800	PALE	8	S	2035.8	2036.0	.3	29.0			QL=6 ST=2 TYP=3
	2695	PENT	1	S	2134.8	2135.0	1.5	7.4	3.6		
22	8800	LEAR	20	GRF	0013.1	0015.3	9.0	24.0			QL=6 ST=2 TYP=2
	8800	LEAR	8	S	0430.8	0431.8	2.0	19.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0450.6	0450.6	4.5	19.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0450.6	0450.8	2.9	10.0			QL=6 ST=2 TYP=3
	2695	LEAR	47	GB	0724.0	0724.6	2.6	58.0			QL=6 ST=2 TYP=5
	2695	LEAR	8	S	0739.1	0739.5	1.0	16.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0832.1	0833.0	2.0	22.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0832.3	0833.0	1.8	21.0			QL=6 ST=2 TYP=3
	2695	ATHN	47	GB	1142.8	1143.1	2.0	79.0			QL=2 ST=2 TYP=5
	8800	ATHN	47	GB	1143.0	1143.1	1.1	81.0			QL=2 ST=2 TYP=5
	8800	ATHN	47	GB	1146.3	1147.3	2.7	68.0			QL=2 ST=2 TYP=5
	2695	ATHN	47	GB	1146.5	1147.3	7.6	100.0			QL=2 ST=2 TYP=5
	2695	SGMR	47	GB	1223.1	1223.3	12.0	139.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1223.1	1223.3	8.7	290.0			QL=6 ST=2 TYP=5
	2800	OTTA	240AR		1325.0	1333.0	8.0	11.2	5.6		
	2695	ATHN	4	S/F	1330.8	1336.1	11.3	26.0			QL=2 ST=2 TYP=3
	8800	ATHN	4	S/F	1330.8	1336.1	10.5	6.0			QL=2 ST=2 TYP=3
	2800	OTTA	1	S	1331.0	1331.5	1.5	6.2	3.1		
	2800	OTTA	4	S/F	1334.5	1335.5	4.0	16.4	8.0		
	2695	SGMR	8	S	1335.3	1335.6	1.2	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	8	S	1346.5	1346.5	.3	14.8			
	2800	OTTA	240AR		1425.0	1510.0	45.0	14.6	7.0		
	2800	OTTA	4	S/F	1425.6	1426.0	9.0	84.0	13.6		
	8800	SGMR	47	GB	1425.8	1425.8	1.2	130.0			QL=6 ST=2 TYP=5
	2695	SGMR	47	GB	1425.8	1425.8	2.7	60.0			QL=6 ST=2 TYP=5
	2695	ATHN	47	GB	1425.8	1426.1	4.0	76.0			QL=2 ST=2 TYP=5
	8800	ATHN	47	GB	1426.0	1426.1	1.3	81.0			QL=2 ST=2 TYP=5
	2800	OTTA	3	S	1444.0	1444.2	4.0	44.0	8.8		
	8800	SGMR	47	GB	1444.1	1444.1	.9	60.0			QL=6 ST=3 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type	Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean (10 -22 W/m 2 Hz)	Int	Remarks
22	2695	SGMR	4 S/F	1444.1	1444.1	2.2	41.0			QL=6 ST=2 TYP=3
	2800	OTTA	8 S	1524.5	1524.6	.5	3.2	1.6		
	2800	OTTA	1 S	1533.5	1534.0	2.0	5.0	2.3		
	2800	OTTA	240AR	1550.0	1615.0	25.0	6.2	3.1		
	2800	OTTA	2 S/F	1557.8	1559.0	3.5	6.2	3.2		
	2800	OTTA	3 S	1635.0	1637.4	18.0	24.6	8.0		
	2800	OTTA	8 S	1656.0	1656.1	.3	8.2			
	8800	SGMR	47 GB	1657.8	1658.0	13.8	110.0			QL=6 ST=2 TYP=5
	2800	OTTA	46F C	1657.9	1702.0	8.1	73.0	24.0		
	2695	SGMR	47 GB	1701.1	1702.3	9.0	59.0			QL=6 ST=2 TYP=5
	2800	OTTA	28 PRE	1725.0		15.0	10.6			
	2800	OTTA	47 GB	1740.0	1808.0	70.0	12610.0	965.0		
	8800	SGMR	47 GB	1741.1	1743.3	11.2	189.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1741.3	1743.6	11.0	110.0			QL=6 ST=2 TYP=5
	8800	PALE	47 GB	1743.0	1743.6	9.3	200.0			QL=6 ST=2 TYP=5
	2695	SGMR	49 GB	1752.3	1753.6	12.3	1899.0			QL=6 ST=2 TYP=6
	8800	SGMR	49 GB	1752.3	1755.6	12.3	280.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	1752.3	1755.8	10.3	290.0			QL=6 ST=2 TYP=6
	8800	PALE	49 GB	1802.6	1802.8	9.7	530.0			QL=6 ST=2 TYP=7
	2695	SGMR	49 GB	1804.6	1806.5	9.7	8200.0			QL=6 ST=2 TYP=7
	8800	SGMR	49 GB	1804.6	1806.5	9.7	860.0			QL=6 ST=2 TYP=7
	8800	PALE	49 GB	1812.3	1812.5	10.7	1300.0			QL=6 ST=2 TYP=7
	8800	SGMR	49 GB	1814.3	1814.6	11.5	1399.0			QL=6 ST=2 TYP=7
	2695	SGMR	49 GB	1814.3	1815.1	11.5	2800.0			QL=6 ST=2 TYP=7
	8800	PALE	49 GB	1823.0	1823.1	15.8	1699.0			QL=6 ST=2 TYP=6
	8800	SGMR	49 GB	1825.8	1825.8	9.5	620.0			QL=6 ST=2 TYP=6
	2695	SGMR	49 GB	1825.8	1826.1	9.5	1000.0			QL=6 ST=2 TYP=6
	8800	SGMR	47 GB	1835.3	1835.5	12.8	280.0			QL=6 ST=2 TYP=5
	2695	SGMR	49 GB	1835.3	1836.8	12.8	390.0			QL=6 ST=2 TYP=6
	8800	SGMR	47 GB	1848.1	1848.3	10.7	160.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1848.1	1849.0	10.7	68.0			QL=6 ST=2 TYP=5
	2800	OTTA	30 PBI	1850.0	1850.0	170.0	63.0	17.0		
	8800	SGMR	47 GB	1858.8	1859.0	8.7	139.0			QL=6 ST=2 TYP=5
	2695	SGMR	20 GRF	1858.8	1900.1	8.7	53.0			QL=6 ST=2 TYP=2
	2800	OTTA	46F C	1859.0	1905.2	10.0	17.2	5.8		
	2695	SGMR	20 GRF	1907.5	1907.6	16.1	46.0			QL=6 ST=2 TYP=2
	8800	SGMR	47 GB	1907.5	1908.0	20.6	110.0			QL=6 ST=2 TYP=5
	2695	PENT	46F C	1931.0	1933.2	4.0	86.0	17.4		
	2800	OTTA	4 S/F	2055.0	2056.5	5.0	21.0	10.5		
	2695	PENT	8 S	2121.0	2121.1	.3	16.4			
	8800	LEAR	20 GRF	2301.6	2303.5	4.2	19.0			QL=6 ST=2 TYP=2
	8800	LEAR	20 GRF	2345.5	2346.5	1.0	17.0			QL=6 ST=2 TYP=2
23	8800	ATHN	47 GB	0805.6	0806.6	11.5	150.0			QL=2 ST=2 TYP=5
	8800	LEAR	47 GB	0806.1	0806.3	2.2	219.0			QL=6 ST=2 TYP=5
	2695	LEAR	47 GB	0806.1	0806.5	3.2	130.0			QL=6 ST=2 TYP=5
	2695	ATHN	47 GB	0806.1	0806.6	12.0	130.0			QL=2 ST=2 TYP=5
	2695	LEAR	8 S	0810.3	0811.3	2.0	19.0			QL=6 ST=2 TYP=3
	8800	ATHN	8 S	0859.6	0859.8	.9	6.0			QL=2 ST=2 TYP=3
	2695	ATHN	8 S	0859.6	0859.8	1.0	9.0			QL=2 ST=2 TYP=3
	8800	ATHN	47 GB	0919.8	0921.8	5.3	86.0			QL=2 ST=2 TYP=5
	8800	LEAR	47 GB	0920.1	0922.0	3.7	130.0			QL=5 ST=2 TYP=5
	8800	ATHN	47 GB	1118.1	1119.0	4.4	100.0			QL=2 ST=2 TYP=5
	2695	ATHN	47 GB	1118.1	1119.0	7.5	119.0			QL=2 ST=2 TYP=5
	2695	ATHN	8 S	1243.3	1243.8	.8	17.0			QL=2 ST=2 TYP=3
	8800	SGMR	47 GB	1246.8	1247.1	1.3	50.0			QL=6 ST=2 TYP=5
	2800	OTTA	4 S/F	1307.6	1309.7	6.0	22.0	11.0		
	8800	ATHN	4 S/F	1317.3	1318.8	4.8	30.0			QL=2 ST=2 TYP=3
	2695	ATHN	4 S/F	1317.3	1318.8	4.8	20.0			QL=2 ST=2 TYP=3
	8800	SGMR	4 S/F	1317.6	1317.8	2.5	48.0			QL=6 ST=2 TYP=3
	2695	SGMR	8 S	1318.6	1319.6	2.0	29.0			QL=6 ST=2 TYP=3
	8800	ATHN	47 GB	1345.1	1346.0	5.4	139.0			QL=2 ST=2 TYP=5
	2695	ATHN	47 GB	1345.1	1346.0	6.2	119.0			QL=2 ST=2 TYP=5
	2800	OTTA	46F C	1345.3	1345.7	4.7	150.0	46.2		
	8800	SGMR	47 GB	1345.3	1345.8	4.0	200.0			QL=6 ST=2 TYP=5
	2695	SGMR	47 GB	1345.6	1345.8	4.7	130.0			QL=6 ST=2 TYP=5
	2800	OTTA	29 PBI	1350.0	1350.0	9.0	6.2	2.2		
	2695	ATHN	47 GB	1431.1	1432.3	2.5	55.0			QL=2 ST=2 TYP=5
	8800	ATHN	47 GB	1431.1	1432.3	2.5	58.0			QL=2 ST=2 TYP=5

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean	Int	Remarks
23	8800	SGMR	47	GB	1431.3	1431.8	2.0	88.0			QL=6 ST=3 TYP=5
	2800	OTTA	3	S	1431.4	1431.9	3.0	51.0	12.6		
	2695	SGMR	47	GB	1431.6	1431.8	1.9	50.0			QL=6 ST=3 TYP=5
	2800	OTTA	2	S/F	1439.0	1440.0	3.0	9.4	3.2		
	2695	SGMR	47	GB	1452.6	1453.1	3.4	71.0			QL=6 ST=3 TYP=5
	2800	OTTA	46F	C	1452.7	1453.1	5.0	72.0	20.2		
	8800	SGMR	47	GB	1452.8	1453.1	1.3	70.0			QL=6 ST=3 TYP=5
	2800	OTTA	3	S	1511.0	1511.5	2.0	10.8	3.8		
	2800	OTTA	1	S	1517.0	1518.0	2.0	8.0	2.8		
	2800	OTTA	3	S	1520.0	1520.3	3.0	31.0	6.0		
	2695	SGMR	8	S	1520.1	1520.3	1.7	23.0			QL=6 ST=2 TYP=3
	2695	SGMR	47	GB	1539.6	1539.8	1.9	53.0			QL=6 ST=3 TYP=5
	2800	OTTA	3	S	1539.7	1540.0	4.0	57.0	11.6		
	8800	SGMR	8	S	1539.8	1539.8	1.0	43.0			QL=6 ST=3 TYP=3
	2800	OTTA	45	C	1606.9	1610.1	9.0	33.0	8.0		
	8800	SGMR	8	S	1609.8	1610.1	1.3	41.0			QL=6 ST=2 TYP=3
	2695	SGMR	4	S/F	1610.0	1610.1	4.6	38.0			QL=6 ST=2 TYP=3
	2800	OTTA	3	S	1652.2	1652.8	2.5	25.0	8.0		
	8800	SGMR	8	S	1652.6	1652.8	1.2	47.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1652.8	1652.8	1.0	20.0			QL=6 ST=2 TYP=3
	8800	PALE	49	GB	1749.8	1750.1	1.3	660.0			QL=3 ST=2 TYP=6
	2800	OTTA	1	S	1853.5	1853.7	1.5	7.0	2.4		
	8800	SGMR	8	S	1856.1	1856.6	1.5	37.0			QL=6 ST=2 TYP=3
	8800	PALE	8	S	1856.3	1856.5	.3	20.0			QL=3 ST=2 TYP=3
	2800	OTTA	21	GRF	1940.0	2025.0	130.0	6.6			
	8800	SGMR	47	GB	1943.1	1943.8	3.2	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1943.7	1944.0	5.0	32.0	7.0		
	2695	SGMR	8	S	1943.8	1944.0	1.0	27.0			QL=6 ST=2 TYP=3
	8800	SGMR	8	S	1958.6	1958.8	1.2	40.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	2315.6	2315.8	1.5	33.0			QL=5 ST=2 TYP=3
	8800	LEAR	4	S/F	2323.3	2323.8	2.7	32.0			QL=5 ST=3 TYP=3
	2695	LEAR	4	S/F	2359.8		3.3	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	2359.8		2.3	13.0			QL=5 ST=2 TYP=3
24	8800	LEAR	8	S	0012.0	0012.3	1.6	44.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0443.3	0444.1	2.8	8.0			QL=6 ST=2 TYP=3
	8800	LEAR	20	GRF	0443.3	0454.0	22.2	10.0			QL=6 ST=2 TYP=2
	8800	LEAR	8	S	0750.3	0751.1	1.3	20.0			QL=1 ST=2 TYP=3
	2695	LEAR	8	S	0750.3	0751.1	1.3	8.0			QL=5 ST=2 TYP=3
	2800	OTTA	8	S	1313.5	1313.6	.2	15.0			
	2800	OTTA	21	GRF	1810.0	1830.0	140.0	4.0	2.2		
	2695	SGMR	47	GB	1939.5	1939.6	8.1	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1939.5	1939.7	2.0	121.0	24.0		
	2800	OTTA	8	S	2053.7	2053.9	.5	20.4	10.2		
	2695	PENT	21	GRF	2127.0	2131.0	11.0	10.6	5.6		
	2695	PENT	8	S	2130.2	2130.7	.7	6.6	4.0		
25	8800	LEAR	20	GRF	0019.0	0021.1	5.3	11.0			QL=5 ST=2 TYP=2
	8800	LEAR	4	S/F	0125.5	0128.1	5.1	48.0			QL=5 ST=3 TYP=3
	2695	LEAR	4	S/F	0127.6	0128.1	2.2	26.0			QL=6 ST=2 TYP=3
	8800	LEAR	49	GB	0413.6	0414.3	9.5	910.0			QL=5 ST=2 TYP=6
	2695	LEAR	47	GB	0413.8	0414.5	12.7	260.0			QL=6 ST=2 TYP=5
	2695	LEAR	4	S/F	0631.0	0631.1	2.8	8.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0631.0	0631.5	3.8	18.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	0725.5	0730.1	39.1	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0726.1	0726.3	.7	7.0			QL=6 ST=2 TYP=3
	8800	ATHN	4	S/F	0807.6	0808.8	4.2	48.0			QL=2 ST=2 TYP=3
	2695	ATHN	4	S/F	0807.6	0810.3	3.5	38.0			QL=2 ST=2 TYP=3
	8800	LEAR	47	GB	0808.1	0808.6	4.0	110.0			QL=5 ST=2 TYP=5
	2695	LEAR	4	S/F	0808.1	0810.1	4.0	42.0			QL=6 ST=2 TYP=3
	8800	ATHN	8	S	1220.1	1220.6	1.2	17.0			QL=2 ST=2 TYP=3
	2695	ATHN	47	GB	1220.3	1220.6	1.8	67.0			QL=2 ST=2 TYP=5
	2695	ATHN	47	GB	1303.3	1304.1	3.0	74.0			QL=2 ST=2 TYP=5
	8800	ATHN	4	S/F	1303.3	1304.1	2.3	47.0			QL=2 ST=2 TYP=3
	2695	SGMR	47	GB	1303.8	1304.1	2.3	69.0			QL=6 ST=2 TYP=5
	8800	SGMR	47	GB	1303.8	1304.1	2.3	119.0			QL=6 ST=2 TYP=5
	2800	OTTA	3	S	1304.0	1304.2	3.0	69.0	27.0		
	8800	SGMR	8	S	1316.6	1316.8	1.2	21.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1359.0	1359.1	1.0	2.2	1.1		
	2800	OTTA	1	S	1527.0	1527.5	3.0	4.0	2.0		

SOLAR RADIO EMISSION
SELECTED FIXED FREQUENCY EVENTS

NOVEMBER 1982

Day	Freq	Sta	Type		Start (UT)	Time of Maximum (UT)	Duration (Min)	Flux Density Peak (10 -22 W/m 2 Hz)	Flux Density Mean	Int	Remarks
25	8800	SGMR	4	S/F	1527.1	1527.3	2.2	26.0			QL=6 ST=2 TYP=3
26	2695	LEAR	49	GB	0219.6	0224.6	15.5	160.0			QL=6 ST=2 TYP=7
	8800	LEAR	49	GB	0219.6	0224.6	15.5	160.0			QL=6 ST=2 TYP=7
	2695	LEAR	49	GB	0235.1	0235.3	20.0	1199.0			QL=6 ST=2 TYP=6
	8800	LEAR	49	GB	0235.1	0235.3	20.0	8600.0			QL=6 ST=2 TYP=6
	2695	LEAR	49	GB	0255.1	0255.1	12.2	1600.0			QL=6 ST=2 TYP=6
	8800	LEAR	49	GB	0255.1	0255.1	12.2	8600.0			QL=6 ST=2 TYP=6
	2800	OTTA	21	GRF	1420.0	1425.0	60.0	2.0	1.0		
	2800	OTTA	3	S	1506.2	1506.5	1.5	48.0	9.6		
	8800	SGMR	8	S	1506.5	1506.6	1.1	25.0			QL=6 ST=2 TYP=3
	2695	SGMR	8	S	1506.5	1506.6	1.1	36.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1610.7	1611.2	1.5	133.0	16.6		
	2695	SGMR	47	GB	1611.1	1611.3	1.2	100.0			QL=6 ST=2 TYP=5
	2800	OTTA	260	FAL	1710.0	1730.0	20.0	-2.8	-1.4		
	2800	OTTA	8	S	1802.1	1802.1	.1	3.4			
	2800	OTTA	3	S	1942.0	1942.8	13.0	467.0	50.0		
	8800	SGMR	47	GB	1942.3	1942.3	1.5	219.0			QL=6 ST=2 TYP=5
	2695	SGMR	49	GB	1942.3	1942.5	8.3	600.0			QL=6 ST=2 TYP=6
	2800	OTTA	31	ABS	1955.0	2010.0	30.0	-3.2	-1.8		
	2800	OTTA	20	GRF	2035.0		70.0	6.2	4.4		
27	2695	LEAR	8	S	0456.8	0456.8	1.0	17.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	0456.8	0456.8	1.8	10.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	0833.3	0833.6	5.8	39.0			QL=6 ST=2 TYP=3
	2800	OTTA	20	GRF	1450.0	1457.0	15.0	3.0	1.5		
28	8800	LEAR	4	S/F	0556.3	0557.6	4.8	44.0			QL=5 ST=2 TYP=3
	2695	LEAR	4	S/F	1001.8	1003.0	2.2	10.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	1002.5	1002.6	1.0	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	1005.6	1005.6	2.5	11.0			QL=6 ST=2 TYP=3
	2800	OTTA	1	S	1447.0	1449.0	5.0	5.0	2.5		
	2800	OTTA	20	GRF	1635.0	1700.0	90.0	6.4	3.2		
	2800	OTTA	23	GRF	1855.0	2040.0	220.0	7.2	3.0		
	2695	PENT	2	S/F	2001.0	2004.0	6.0	8.6	2.9		
	8800	LEAR	4	S/F	2306.3	2306.3	2.5	28.0			QL=5 ST=3 TYP=3
	2695	LEAR	8	S	2306.8	2307.1	1.0	5.0			QL=6 ST=2 TYP=3
	8800	LEAR	8	S	2333.8	2334.0	1.0	11.0			QL=5 ST=3 TYP=3
29	2695	LEAR	8	S	0201.8	0202.0	1.0	13.0			QL=6 ST=2 TYP=3
	2695	LEAR	8	S	0927.8	0929.3	1.8	22.0			QL=6 ST=2 TYP=3
	2800	OTTA	4	S/F	1742.0	1744.2	7.0	30.0	8.0		
	2695	PENT	1	S	2106.0	2106.3	1.5	2.6	1.3		
	2695	PENT	4	S/F	2137.2	2137.7	2.0	48.0	13.0		
	8800	LEAR	8	S	2322.8	2323.5	2.0	44.0			QL=5 ST=3 TYP=3
	2695	LEAR	8	S	2323.1	2323.8	1.2	20.0			QL=6 ST=2 TYP=3
30	8800	LEAR	47	GB	0258.8	0259.6	2.2	60.0			QL=5 ST=3 TYP=5
	2695	LEAR	8	S	0411.3	0411.6	.8	9.0			QL=6 ST=2 TYP=3
	8800	LEAR	47	GB	0411.3	0411.6	.8	70.0			QL=5 ST=2 TYP=5
	8800	ATHN	4	S/F	0839.5	0840.3	2.1	47.0			QL=2 ST=2 TYP=3
	2695	ATHN	47	GB	0839.6	0840.1	3.7	119.0			QL=2 ST=2 TYP=5
	2695	LEAR	47	GB	0840.1	0840.6	4.2	119.0			QL=6 ST=2 TYP=5
	8800	LEAR	47	GB	0840.3	0840.6	2.2	51.0			QL=6 ST=2 TYP=5
	8800	LEAR	4	S/F	0856.1	0858.1	4.9	11.0			QL=6 ST=2 TYP=3
	2695	LEAR	4	S/F	0856.1	0858.3	4.4	9.0			QL=6 ST=2 TYP=3
	2800	OTTA	22	GRF	1515.0	1545.0	75.0	6.8	2.6		
	2800	OTTA	20	GRF	1735.0	1800.0	100.0	3.4	2.8		
	8800	LEAR	8	S	2323.1	2324.1	1.7	11.0			QL=6 ST=2 TYP=3
	8800	LEAR	4	S/F	2351.6	2352.5	3.4	41.0			QL=6 ST=2 TYP=3

Observatories:

BERN = Berne
LEAR = Learmonth
MANI = Manila
ATHN = Athens
OTTA = Ottawa ARO
PALE = Palehua
PENT = Penticton
SGMR = Sagamore Hill

Explanation of Type Code:

1 Simple 1
2 Simple 1F
3 Simple 2
4 Simple 2F
5 Simple
6 Minor
7 Minor +
8 Spike
20 Simple 3
21 Simple 3A
22 Simple 3F
23 Simple 3AF
24 Rise
25 Rise A
26 Fall
27 Rise and Fall
28 Precursor
29 Post Burst Increase
30 Post Burst Increase A
31 Post Burst Decrease
32 Absorption
40 Fluctuation
41 Group of Bursts
42 Series of Bursts
43 Onset on Noise Storm
44 Noise Storm in Progress
45 Complex
46 Complex F
47 Great Burstise Storm
48 Major
49 Major +

SELECTED SOLAR NOISE BURSTS

NOVEMBER 20-23, 1982

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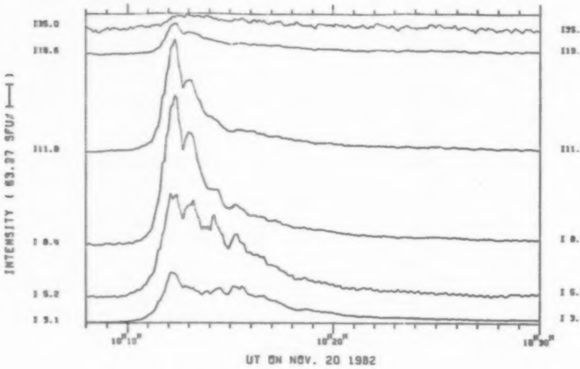

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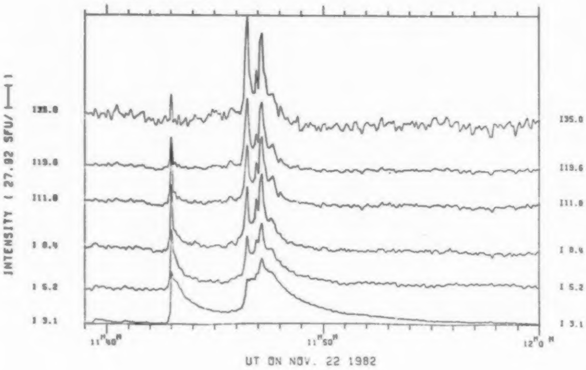

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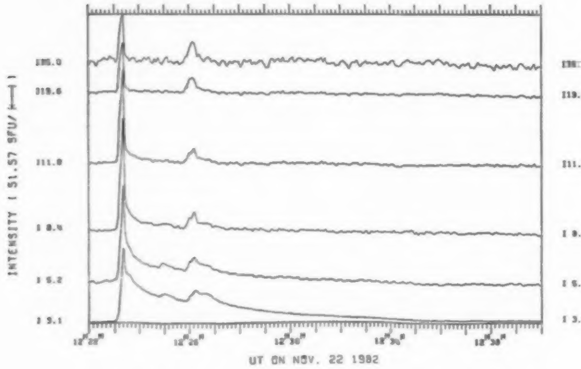

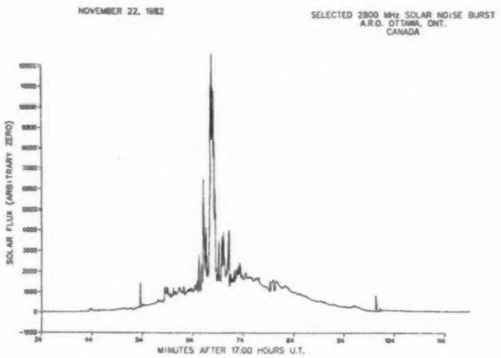

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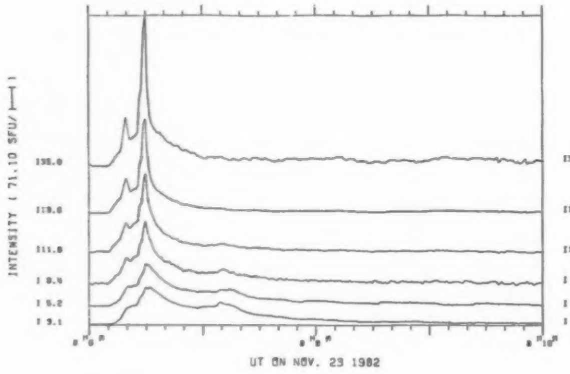

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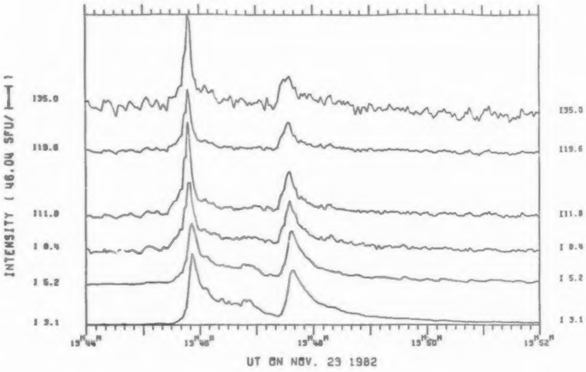

BOULDER GEOMAGNETIC
SUBSTORM LOG
November 1982

DATE	ONSET TIME	DIR	COMMENTS
11/01			Field intermittently active.
	0045	East	Boulder in partial ring current sector.
	0845	West	
	1200	West	Numerous injections with recovery near 1900 UT.
11/02			Field intermittently active.
	0210	East	Weak SS.
	0540	≈ Center	
	1000	West	
	1235	West	
	1420	West	
	1645	West	
11/03			Field unsettled through 1500 UT.
	0725	West	
	0850	West	
11/04			Field intermittently unsettled.
	0910		Weak SS.
	1440		Weak SS.
11/05			Field intermittently unsettled.
	1135	West	
	1355	West	
11/06			Field intermittently unsettled.
	0750	West	
11/07			Field sightly unsettled.
11/08			Field intermittently unsettled.
	1615		
11/09			Field slightly unsettled.
11/10	1220	West	
11/11			Field unsettled all day.
	0230	East	
	0940	West	Numerous injections follow with recovery near 1630 UT.
11/12			Field intermittently unsettled.
	0950		Initial onset at Ft. Yukon, slow expansion northward and eastward. Several injections.
11/13			Field unsettled all day.
	0050		Bays on both H and D component Boulder/Tucson only.
	0920	West	
11/14			Field unsettled 0800-1700 UT.
	0830		Localized SS Cape Parry to Sachs Harbour.
11/15			Field unsettled after 0900 UT.
	0920	West	
11/16			Field intermittently unsettled.
	0635		Weak SS.
	1045		Weak SS.
11/17			Quiet day through 2000 UT, slightly unsettled balance of day.
11/18			Field intermittently unsettled.
	1020	West	Weak SS.
	1320	West	Numerous injections with recovery near 1800 UT.
11/19			Field slightly unsettled.
11/20			Field slightly unsettled.
11/21			Field intermittently unsettled.
	1115	West	Several injections with recovery near 1430 UT.
11/22			Field unsettled through 1200 UT and quiet balance of day.
	0615	Center	
11/23	0917	SSC	Magstorm conditions after 1500 UT.
11/24			Field unsettled with magstorm conditions after 1200 UT.
11/25			Field intermittently active.
	0455	East	
	0725	West	Moderate SS.
11/26			Field intermittently active.
	0245	East	
	0745	West	
	1020	West	
	1405	West	
11/27			Field unsettled all day.
	0420	East	
	0620	West	Initial weak onset, series of injections follow with recovery near 1000 UT.
	1105	West	Initial onset, moderate SS at College, Anchorage and Talkeetna.
11/28			Field unsettled all day.
	0050	East	Boulder in partial ring current sector.
	0955	West	
	1410	West	
11/29			Magstorm conditions 1000-2100 UT.
	0535		Weak SS.
11/30			Field intermittently unsettled.
	0610		Weak SS.
	1325	West	

INFERRED IP MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2021	JUN 6	▨ ▨	▨ *	▨ ▨	□ ▨	□ □	□ □	□ □	▨ □	□ □	AT □	▨ □	▨ ▨	▨ ▨	TA □	▨ ▨	▨ ▨	AT ▨	□ ▨	▨ -	- -	- -	□ -	□ -	□ -	□ -	□ -	□ -
2022	JUL 3	□ -	□ -	□ -	□ -	▨ -	- -	▨ -	- -	- -	□ -	□ -	- -	- -	- -	- -	□ -	□ -	□ -	□ -	□ -	- -	- -	- -	- -	- -	□ -	□ -
2023	JUL 30	□ -	- -	- -	□ -	□ -	□ -	▨ -	- -	□ -	▨ -	▨ -	▨ -	▨ -	▨ -	- -	- -	▨ -	TA -	TA -	- -	□ -	□ -	□ -	□ -	AT -	- -	□ -
2024	AUG 26	- -	□ -	□ -	TA -	TA -	□ -	TA -	▨ -	▨ -	TA -	▨ -	▨ -	▨ -	▨ -	TA -	□ -	TA -	□ -	□ -	□ -	□ -	TA -	□ -	□ -	▨ -	▨ -	▨ -
2025	SEP 22	▨ -	▨ -	□ -	□ -	□ -	□ -	□ -	AT -	TA -	▨ -	▨ -	▨ -	TA -	▨ -	TA -	TA -	TA -	□ -	AT -	▨ -	TA -	AT -	TA -	AT -	TA -	TA -	TA -
2026	OCT 19	AT -	TA -	TA -	□ -	□ -	□ -	□ -	TA -	TA -	▨ -	TA -	▨ -	▨ -	▨ -	▨ -	TA -	▨ -	□ -	□ -	□ -	□ -	AT -	TA -	▨ -	▨ -	□ -	□ -
2027	NOV 15	□ -	□ -	□ -	AT -	AT -	□ -	□ -	□ -	□ -	AT -	□ -	▨ -	□ -	▨ -	▨ -	TA -	▨ -	TA -	TA -	AT -	□ -	□ -	□ -	□ -	□ -	AT -	▨ -
2028	DEC 12	TA -	▨ -	▨ -	▨ -	AT -	AT -	□ -	□ -	AT -	TA -	□ -	▨ -	▨ -	▨ -	□ -	□ -	AT -	□ -	AT -	TA -	□ -	□ -	□ -	□ -	TA -	□ -	- -
2029	1982 JAN 8	▨ -	▨ -	▨ -	▨ -	▨ -	TA -	TA -	□ -	□ -	□ -	▨ -	▨ -	▨ -	TA -	▨ -	□ -	TA -	▨ -	□ -	□ -	AT -	▨ -	- -	- -	AT -	□ -	▨ -
2030	FEB 4	▨ -	▨ -	▨ -	TA -	TA -	TA -	TA -	□ -	▨ -	TA -	□ -	□ -	□ -	□ -	□ -	TA -	□ -	□ -	▨ -	▨ -	□ -	□ -	□ -	TA -	□ -	□ -	TA -
2031	MAR 3	□ -	□ -	□ -	▨ -	▨ -	TA -	TA -	▨ -	TA -	TA -	▨ -	TA -	▨ -	▨ -	TA -	□ -	□ -	□ -	TA -	TA -	□ -	□ -	□ -	□ -	□ -	□ -	AT -
2032	MAR 30	▨ -	TA -	▨ -	TA -	▨ -	▨ -	□ -	▨ -	▨ -	▨ -	TA -	□ -	□ -	- -	□ -	□ -	AT -	TA -	□ -	TA -	□ -	□ -	□ -	□ -	□ -	□ -	□ -
2033	APR 26	- -	AT -	▨ -	▨ -	▨ -	- -	▨ -	TA -	TA -	▨ -	▨ -	▨ -	▨ -	- -	□ -	□ -	□ -	□ -	□ -	□ -	□ -	□ -	□ -	□ -	AT -	AT -	□ -
2034	MAY 23	□ -	□ -	□ -	AT -	- -	TA -	▨ -	▨ -	□ -	□ -	- -	AT -	▨ -	- -	□ -	□ -	□ -	□ -	▨ -	- -	- -	- -	- -	- -	- -	□ -	TA -
2035	JUN 19	□ -	□ -	□ -	□ -	▨ -	▨ -	▨ -	▨ -	▨ -	- -	▨ -	▨ -	TA -	□ -	- -	□ -	- -	□ -	□ -	□ -	- -	□ -	TA -	□ -	□ -	▨ -	□ -
2036	JUL 16	□ -	- -	□ -	- -	- -	TA -	▨ -	□ -	▨ -	▨ -	AT -	▨ -	- -	▨ -	AT -	- -	- -	- -	- -	□ -	- -	- -	▨ -	□ -	□ -	- -	▨ -
2037	AUG 12	▨ -	▨ -	▨ -	- -	▨ -	▨ -	- -	▨ -	TA -	▨ -	- -	TA -	TA -	TA -	▨ -	- -	▨ -	TA -	□ -	TA -	□ -	□ -	□ -	□ -	□ -	□ -	□ -
2038	SEP 8	TA -	AT -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	▨ -	TA -	□ -	AT -	▨ -	▨ -	□ -	□ -	▨ -	TA -	□ -	□ -	□ -	□ -	□ -
2039	OCT 5	□ -	AT -	□ -	AT -	▨ -	▨ -	▨ -	▨ -	▨ -	AT -	TA -	▨ -	▨ -	▨ -	▨ -	AT -	▨ -	▨ -	□ -	▨ -	□ -	▨ -	▨ -	TA -	□ -	□ -	□ -
2040	NOV 1	AT -	□ -	□ -	□ -	AT -	▨ -	▨ -	▨ -	□ -	AT -	▨ -	▨ -	▨ -	▨ -	AT -	▨ -	▨ -	TA -	▨ -	□ -	□ -	- -	▨ -	TA -	AT -	□ -	□ -
2041	NOV 28	TA -	□ -	- -																								

▨ = definitely towards the sun   □ = definitely away from the sun

T = towards the sun   A = away from the sun   * = effect doubtful or not discernible   - = missing data

The table shows daily inferences of the polarity of the interplanetary magnetic field. The first half of the day is based principally on magnetograms produced by the magnetometer at the Vostok Antarctic Station of the USSR. The magnetometer of the U.S. Air Weather Service now operated at Thule by the Danish Meteorological Institute is used for the second half of the day. The Thule magnetometer ceased operating in August 1981.

STANFORD MEAN SOLAR MAGNETIC FIELD

BARTELS ROTATION	DATE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2025	SEP 17	■	■	□	□	□	□	□	□	■	■	■	■	■	■	■	□	□	□	□	□	□	□	■		□	□	□
2026	OCT 14	□	□	□	□	□	□	□	□	□	■	■	■		■	■	■	□	□	□	□	□	▥	■	■	■	■	■
2027	NOV 10	□	□			□			□	□	■	■		■		■	■	□	□	□	□	□	□		□	■		■
2028	DEC 7									□	□	■		■		■	■	■	□	□	□	□	□		□		□	■
2029	1982 JAN 3	■		■	■	■	□	□	□	□	□	□	■	■	■	▥	■	□				□	□	□	□	□		□
2030	JAN 30	▥	■	■	■	■	■	□	□	□	□		□	□	□				□	□	□	□	□	□	□	□	□	□
2031	FEB 26	■	■		■	■	■	■	■	■		■		□	□	□				□		□	□	□	□	□	□	■
2032	MAR 25	■		■	■	■						■	□	□	□	□	□		□	□			□	□	□	□	□	■
2033	APR 21	■	■	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
2034	MAY 18	□	■	■	■	■	■	■	■	■	■	■	■	□	□		□	□	□	□	□	□	□	□	□	□	□	
2035	JUN 14	□	□	■	■	■	■	■	■	■	■	■	■	■	□	□	□	□		□	□	□	□	□	□	□	□	□
2036	JUL 11	□	□	□	□	■	■	■	■	■	■		■	■	■	■	□	□	□	□	□	□	□	□	□	□	□	□
2037	AUG 7	□	□	□	□	■	■	■	■	■	■	■	■	■	■	■	■	■	□	□	□	□	□	□	□	□	□	□
2038	SEP 3	□	□	□	□	□	■	■	■	■	■	■	■	■		■	■	■	□	□	□	□	□	□	□	□	□	□
2039	SEP 30	□	□	□	□	□	■	■	■	■	■	■	■	■	■	■	■	▥	□	■	□	□			□	□		□
2040	OCT 27	□	□	□		■	■	■	■	■		■	■	■		■	■	▥	□	□	□	□				□	□	

POLARITY OF THE MEAN SOLAR MAGNETIC FIELD: □ = FIELD >2μT, ▥ = -2μT ≤FIELD ≤2μT, ■ = FIELD <-2μT
No box visible indicates no data available for that day.

NOTE: Data are taken daily at 2000 UT. Dates given are not Bartels Rotation dates. These earlier dates correspond to the occurrence of phenomena on the Sun that affect the Earth during the given Bartels Rotation.

STANFORD MEAN SOLAR MAGNETIC FIELD (MICROTESLA)

day	1981 Dec.	1982 Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.
01	43	15	-20	-19	.	-6	.	.	49	89	22	-31
02	.	-6	-44	-9	.	-6	33	85	19	102	53	-15
03	46	-17	-29	-20	.	23	38	75	19	84	37	-18
04	-3	.	-3	-39	-17	43	54	71	52	66	18	-38
05	.	-10	9	-44	3	48	80	53	85	68	-6	.
06	-12	-5	19	-21	38	16	82	35	105	55	-41	-63
07	.	-4	43	.	60	41	77	29	81	30	-54	-61
08	.	25	64	-2	57	69	80	42	63	-27	-76	-68
09	.	23	.	.	24	74	68	54	59	-55	-90	.
10	.	36	15	16	.	70	54	63	33	-74	-93	-54
11	.	45	24	34	61	65	50	87	-30	-93	-96	-21
12	.	35	33	35	46	79	58	79	-87	-124	-100	1
13	.	16	.	.	.	87	.	43	-118	-125	-70	19
14	.	-7	.	.	.	77	78	9	-121	-120	-35	34
15	57	-6	.	.	85	72	51	-39	-144	-112	-7	37
16	17	-12	14	21	93	51	-13	-112	-149	.	-1	52
17	-5	-1	16	.	71	38	-51	-164	-141	-49	4	.
18	.	-3	5	4	46	27	-93	-193	-124	-28	-43	.
19	-37	33	15	20	28	-15	-184	-201	-93	-14	55	.
20	.	.	27	31	-6	-57	-237	-189	-59	12	33	22
21	-39	.	38	25	-38	-68	-225	.	-32	40	.	33
22	-11	.	48	22	-78	-93	-170	-128	-16	44	.	.
23	-2	9	41	14	-113	-132	-123	-71	-12	26	17	.
24	35	25	28	-2	-107	-158	-69	-29	5	10	45	12
25	4	35	10	-26	-93	-151	-56	-5	32	8	.	-1
26	39	42	-3	.	-104	-118	-40	12	39	18	54	-31
27	17	36	-34	-61	-117	-26	11	28	47	36	55	-58
28	29	.	.	-56	-122	-26	37	38	46	72	34	.
29	.	15		-53	-77	-10	45	48	25	57	20	.
30	24	0		.	-26	19	59	61	39	52	.	.
31	.	-10		.		46		53	64		-11	

DOT SYMBOL INDICATES NO DATA AVAILABLE FOR THE DAY.

OCTOBER 1982 DATA

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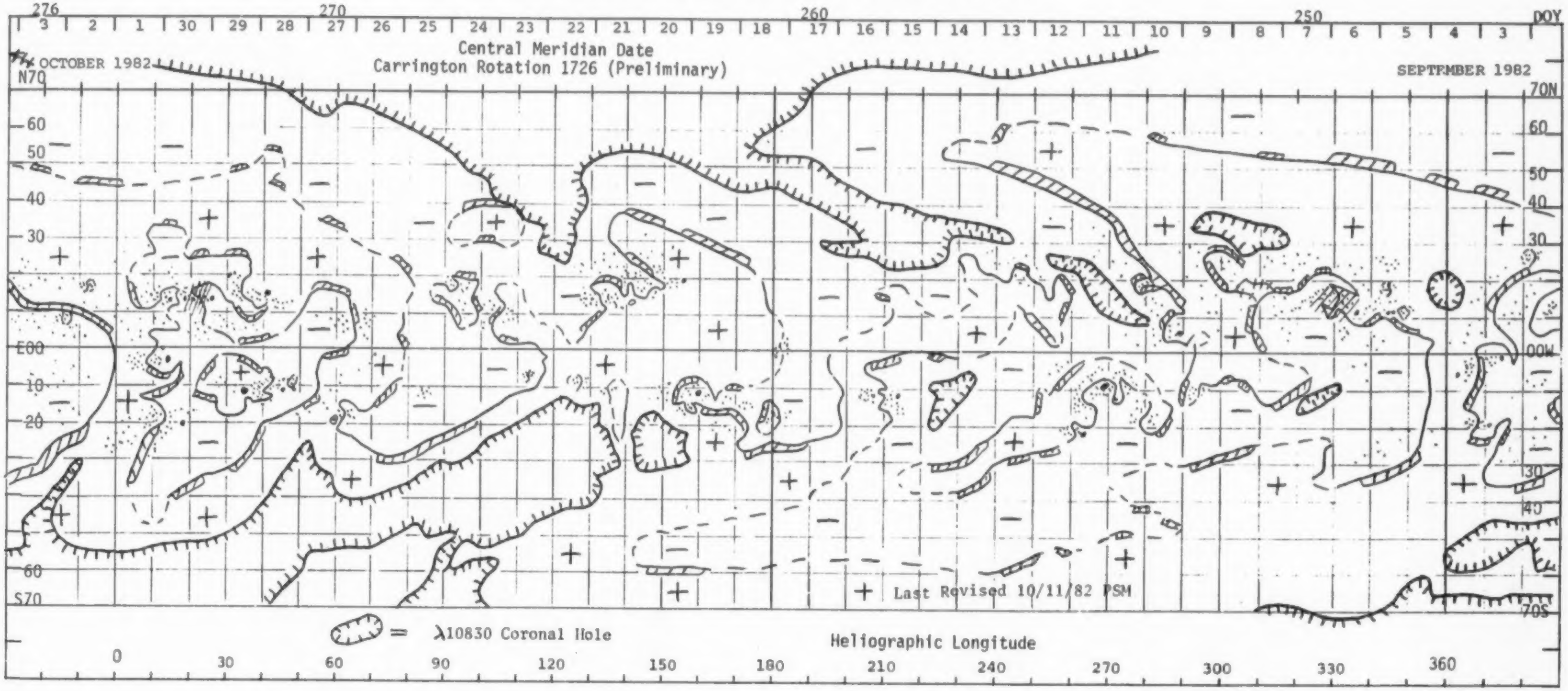
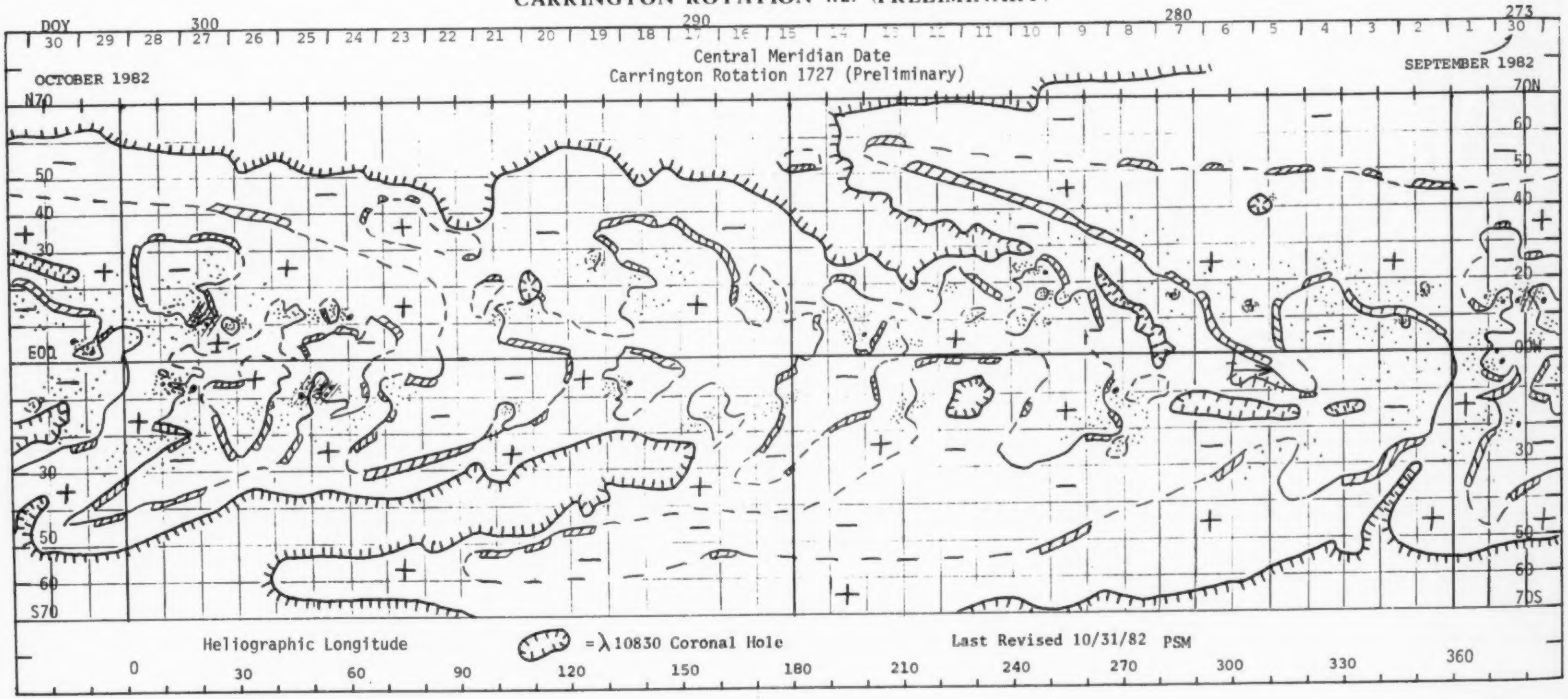
Hα SYNOPTIC CHART

CARRINGTON ROTATION 1726 (PRELIMINARY)



Hα SYNOPTIC CHART

CARRINGTON ROTATION 1727 (PRELIMINARY)

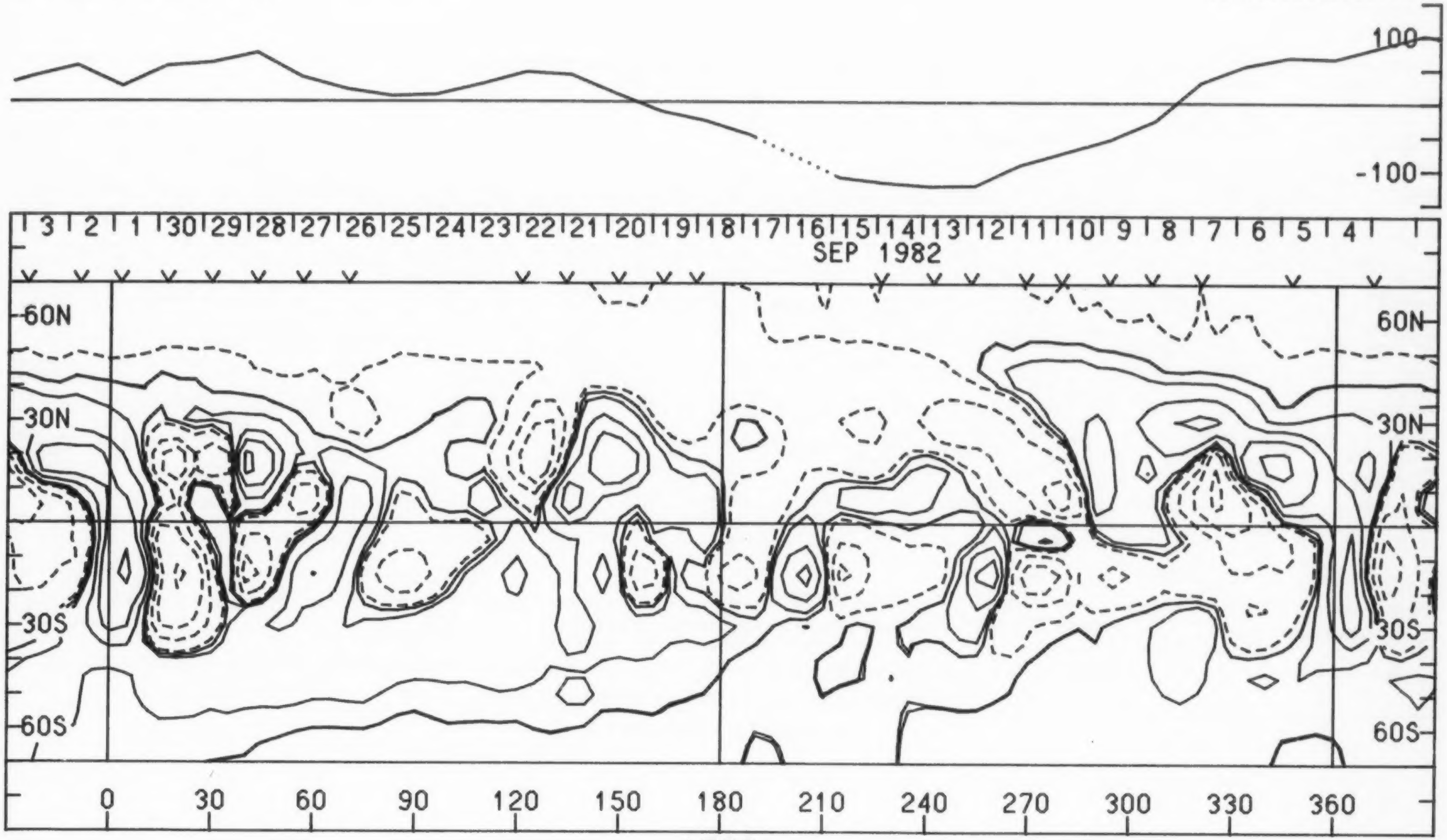

DOY
300
290
280
273
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
30
Central Meridian Date
Carrington Rotation 1727 (Preliminary)
OCTOBER 1982
SEPTEMBER 1982
N70
50
40
30
E00
30
50
60
S70
70N
60
50
40
20
00W
30
50
60
70S
Heliographic Longitude
= λ 10830 Coronal Hole
Last Revised 10/31/82 PSM
0
30
60
90
120
150
180
210
240
270
300
330
360

SOLAR MAGNETIC FIELD SYNOPTIC CHART

CARRINGTON ROTATION 1726

Stanford Solar Observatory

0,±100,200,500... μT

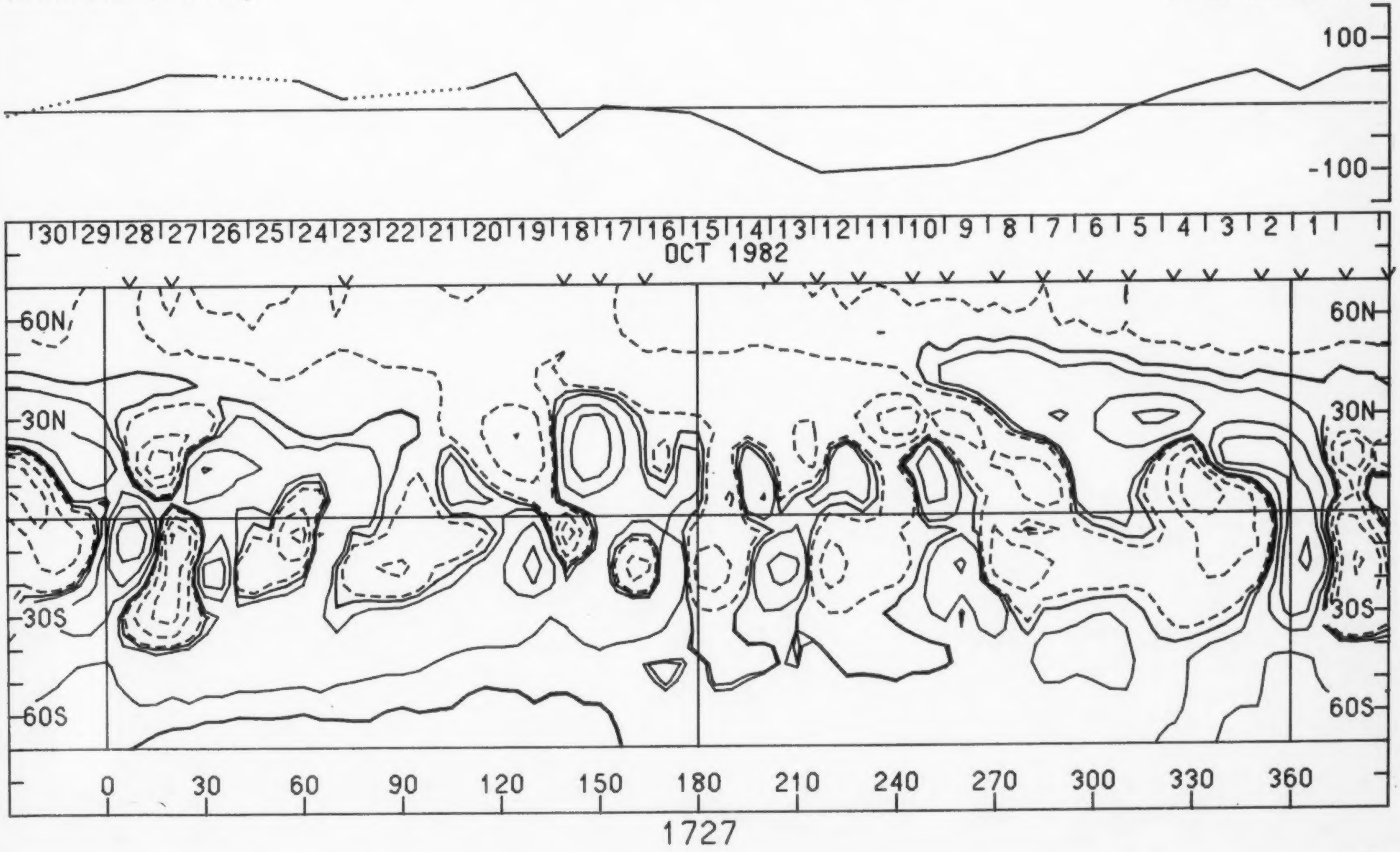


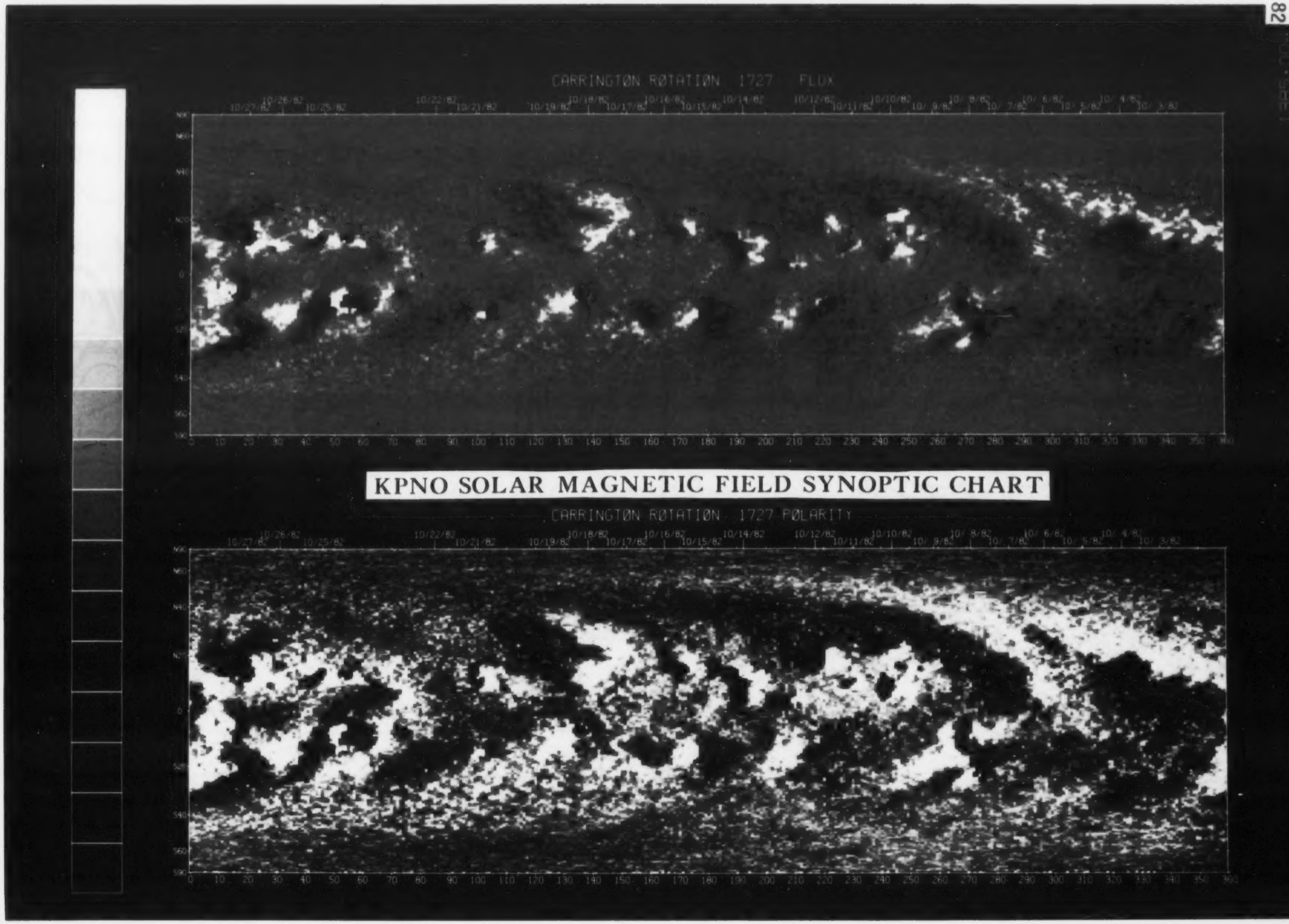
1726

SOLAR MAGNETIC FIELD SYNOPTIC CHART
CARRINGTON ROTATION 1727

Stanford Solar Observatory

0,±100,200,500... μT

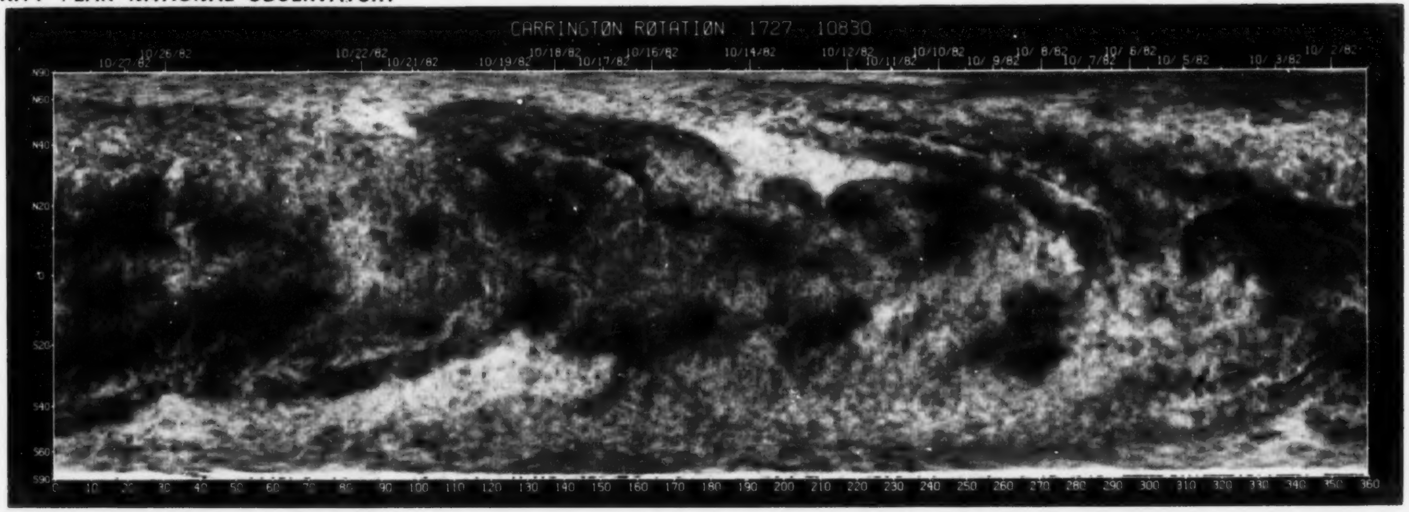




KPNO SOLAR MAGNETIC FIELD SYNOPTIC CHART

HELIUM 10830Å SYNOPTIC MAPS
CARRINGTON ROTATION 1727

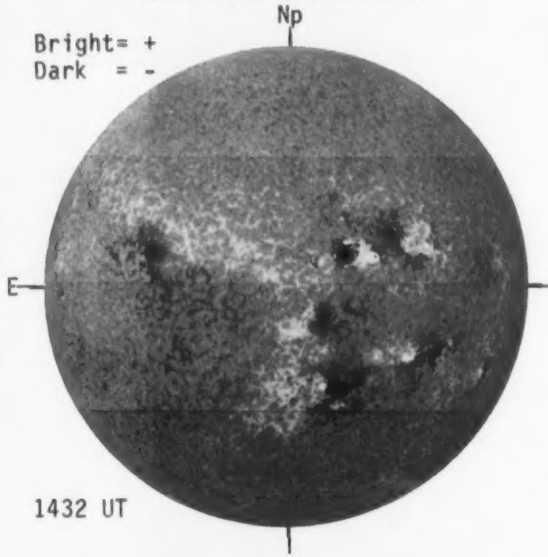
KITT PEAK NATIONAL OBSERVATORY


CARRINGTØN RØTATIØN 1727 10830
10/27/82
10/26/82
10/22/82
10/21/82
10/19/82
10/18/82
10/17/82
10/16/82
10/14/82
10/12/82
10/11/82
10/10/82
10/ 9/82
10/ 8/82
10/ 7/82
10/ 6/82
10/ 5/82
10/ 3/82
10/ 2/82
N90
N60
N40
N20
0
S20
S40
S60
S90
0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340
350
360

O C T O B E R 01, 1 9 8 2 (P= 25.99, B_0= 6.72, L_0= 12.12)

KITT PEAK MAGNETOGRAM

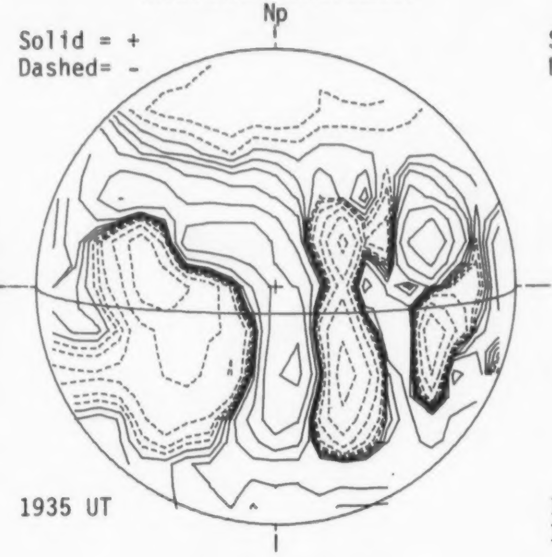
Bright= +
Dark = -



1432 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

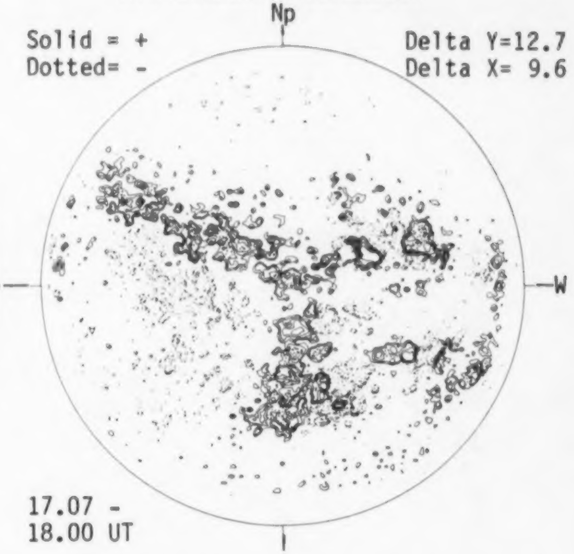


1935 UT

MT. WILSON MAGNETOGRAM

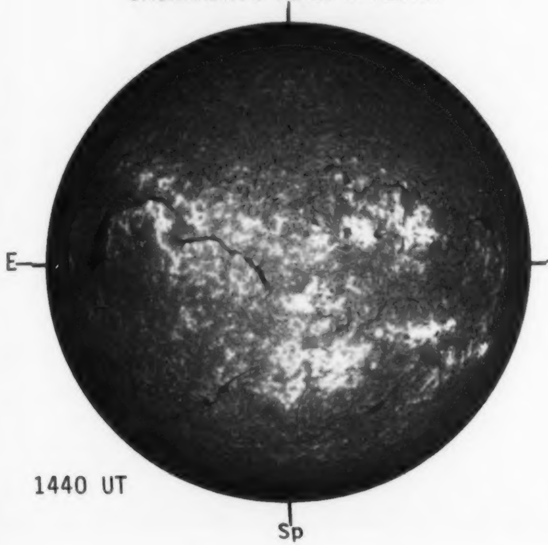
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



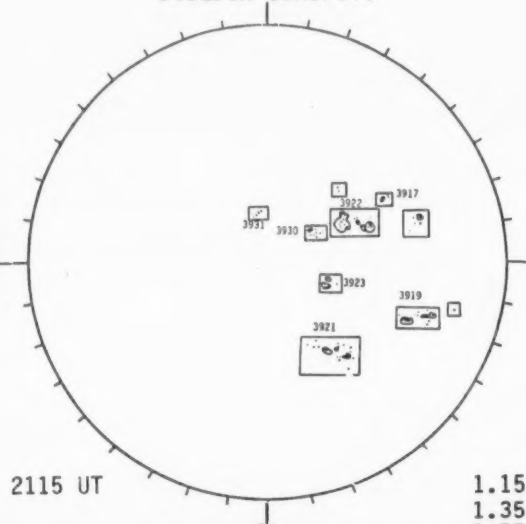
17.07 -
18.00 UT

SACRAMENTO PEAK H-ALPHA



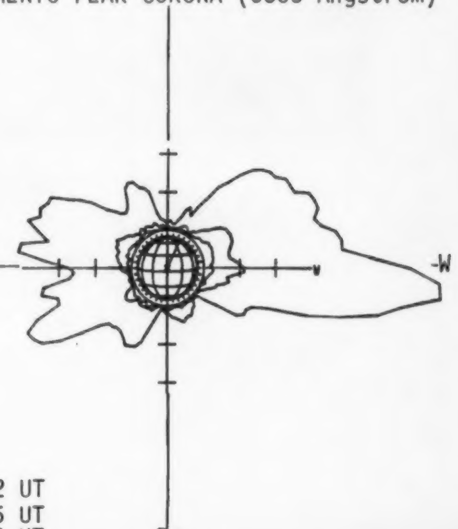
1440 UT

BOULDER SUNSPOTS


3917
3922
3931
3930
3923
3919
3921
Sp

2115 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

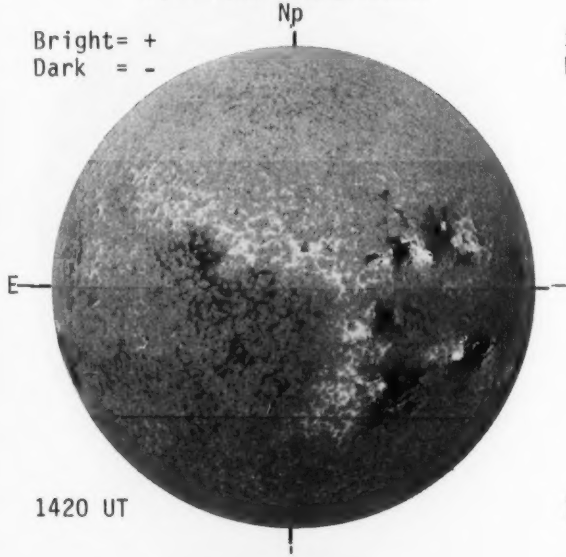


1.15 R_o 1732 UT
1.35 R_o 1715 UT
1.55 Ro 1725 UT

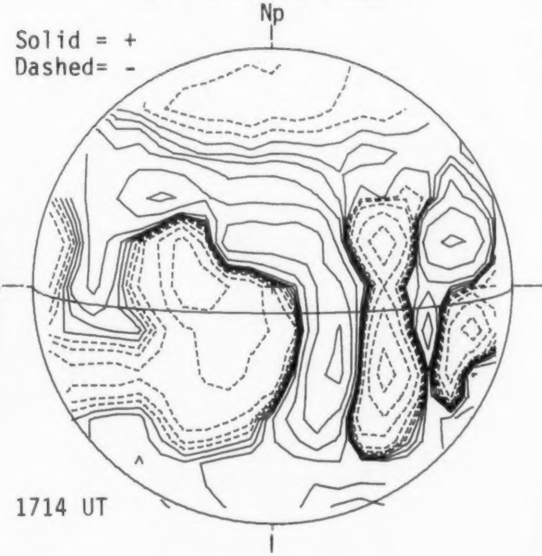
O C T O B E R 02, 1 9 8 2 (P= 26.05, B_0= 6.67, L_0= 358.93)

O C T O B E R 02, 1 9 8 2 (P= 26.05, B_o= 6.67, L_o= 358.93)

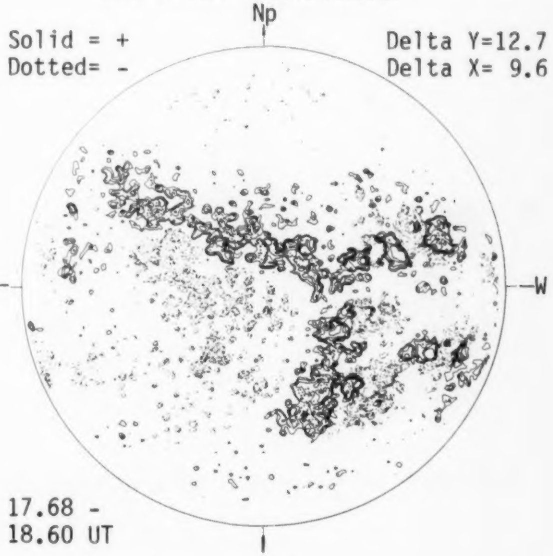
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
E
1420 UT

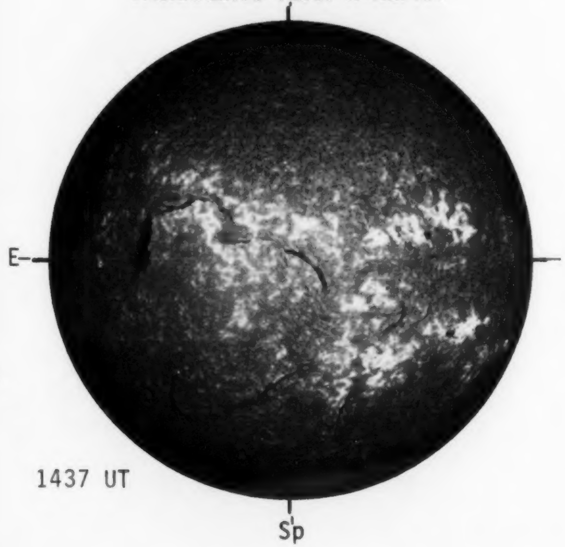
STANFORD MAGNETOGRAM


Np
Solid = +
Dashed= -
1714 UT

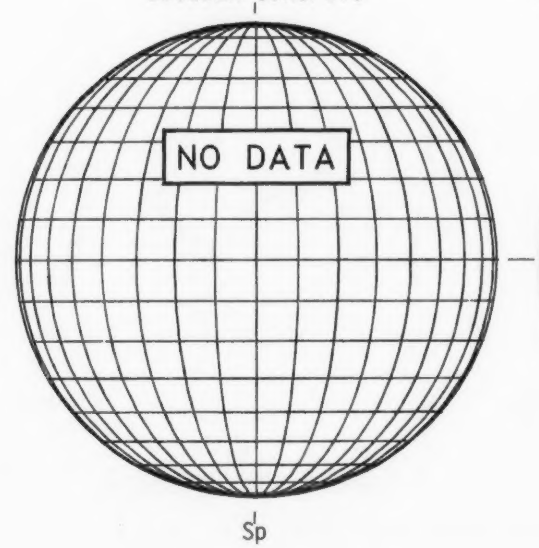
MT. WILSON MAGNETOGRAM


Np
Solid = +
Dotted= -
Delta Y=12.7
Delta X= 9.6
W
17.68 -
18.60 UT

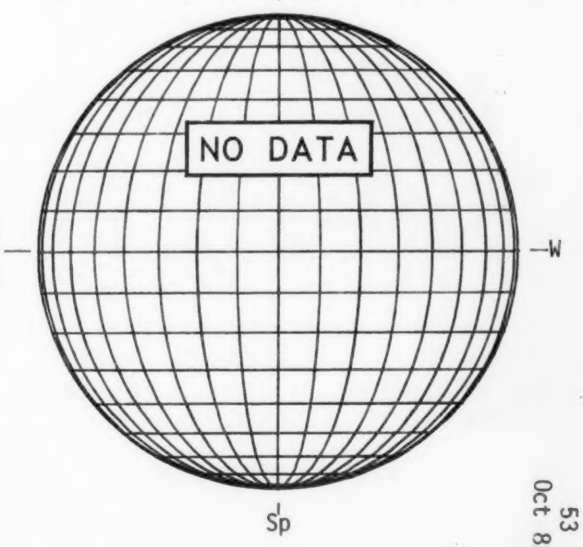
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



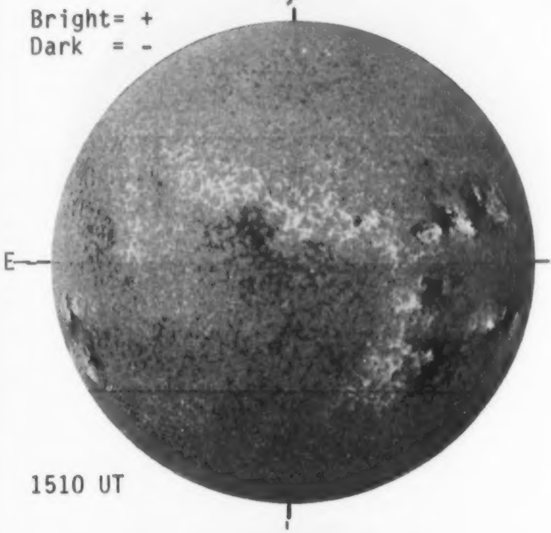
SACRAMENTO PEAK CORONA (5303 Angstrom)



O C T O B E R 03, 1 9 8 2 (P= 26.11, B_o= 6.62, L_o= 345.73)

KITT PEAK MAGNETOGRAM

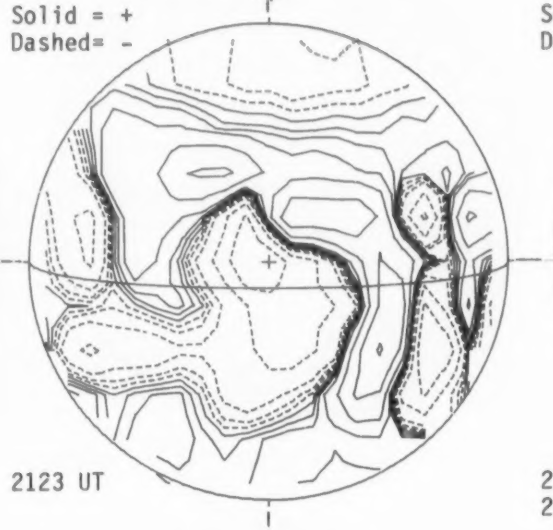
Bright= +
Dark = -



1510 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

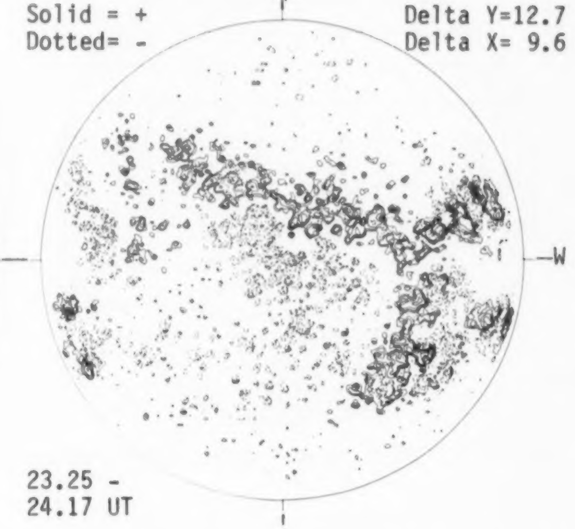


2123 UT

MT. WILSON MAGNETOGRAM

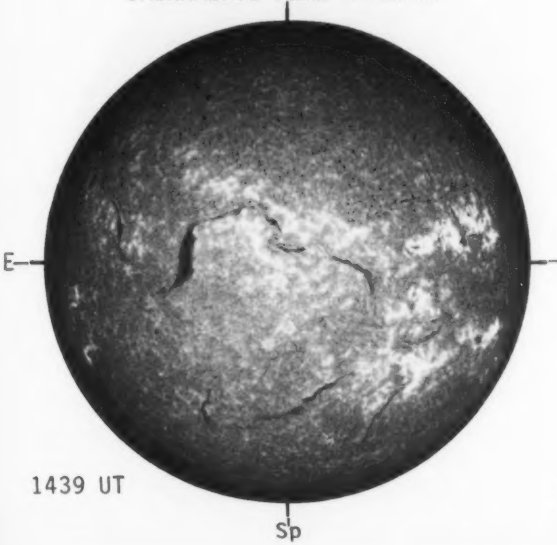
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



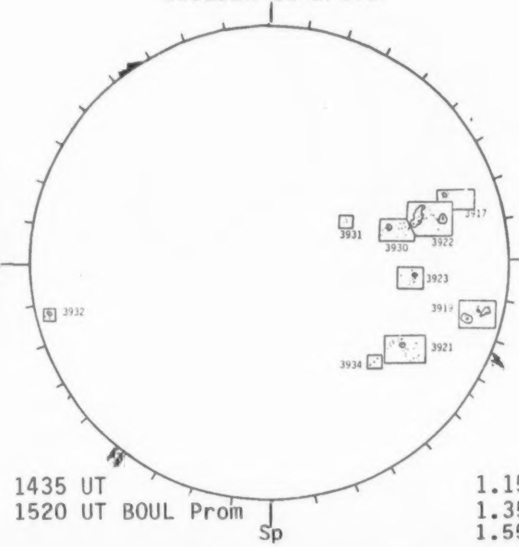
23.25 -
24.17 UT

SACRAMENTO PEAK H-ALPHA



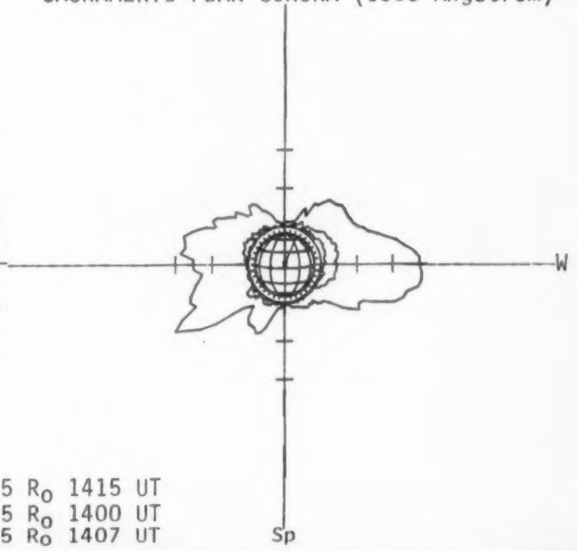
1439 UT

BOULDER SUNSPOTS


3917
3931
3930
3922
3923
3932
3919
3921
3934
Sp

1435 UT
1520 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



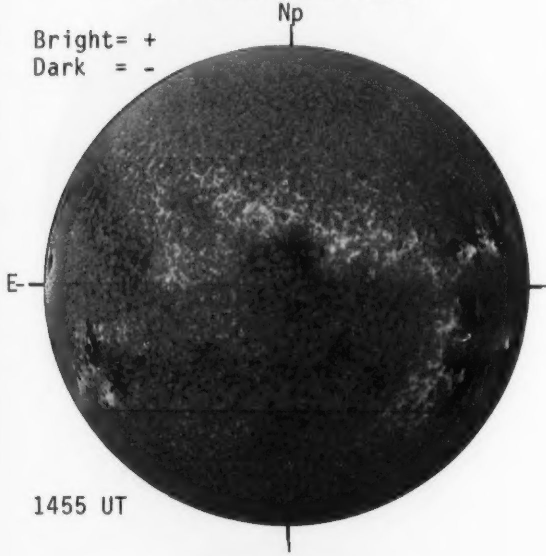
1.15 R_o 1415 UT
1.35 R_o 1400 UT
1.55 R_o 1407 UT

O C T O B E R 04, 1 9 8 2 (P= 26.16, B_o= 6.57, L_o= 332.54)

O C T O B E R 04, 1 9 8 2 (P= 26.16, B_o= 6.57, L_o= 332.54)

KITT PEAK MAGNETOGRAM

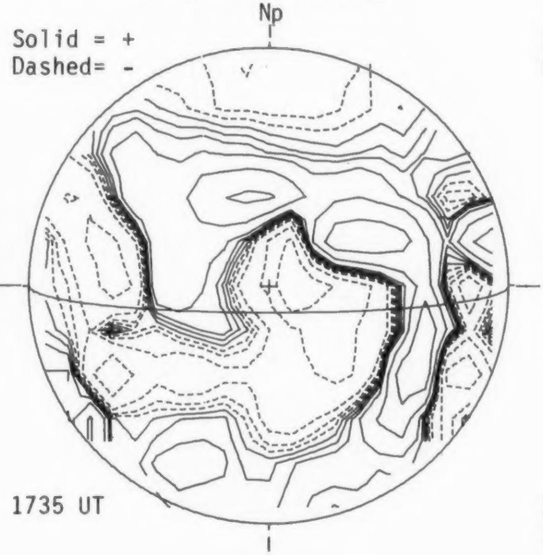
Bright= +
Dark = -



1455 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

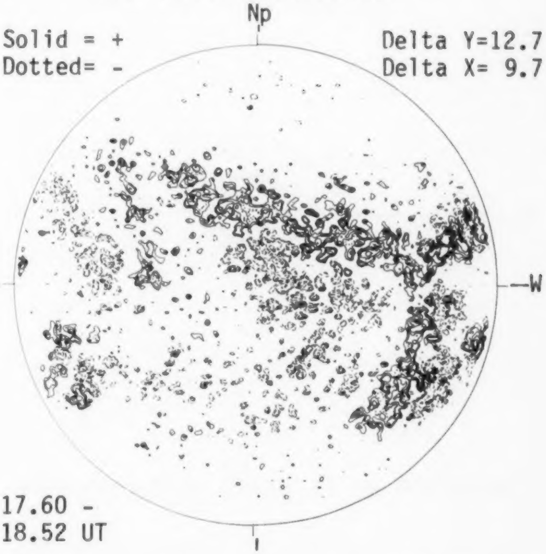


1735 UT

MT. WILSON MAGNETOGRAM

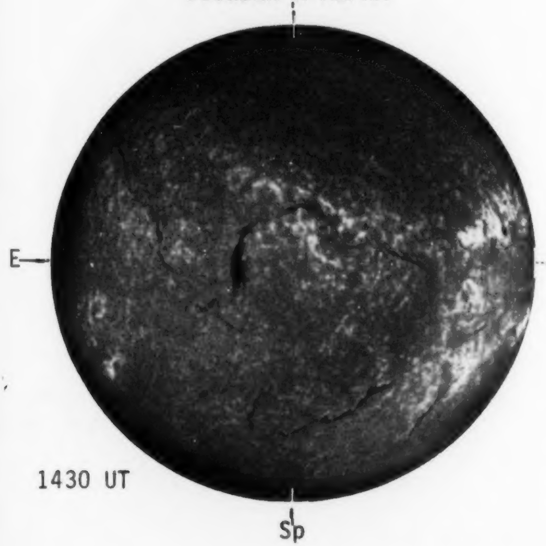
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.7



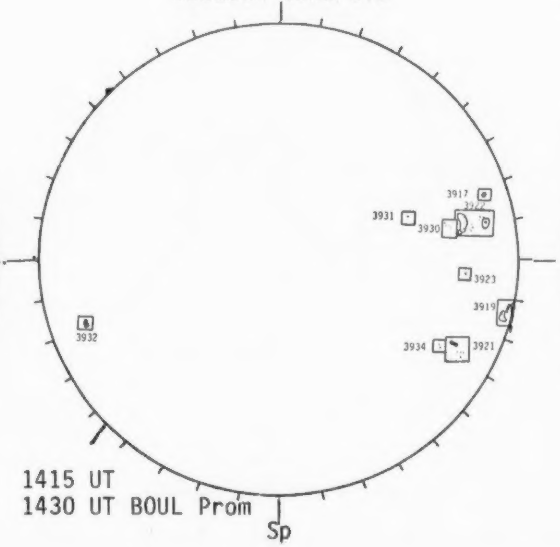
17.60 -
18.52 UT

BOULDER H-ALPHA



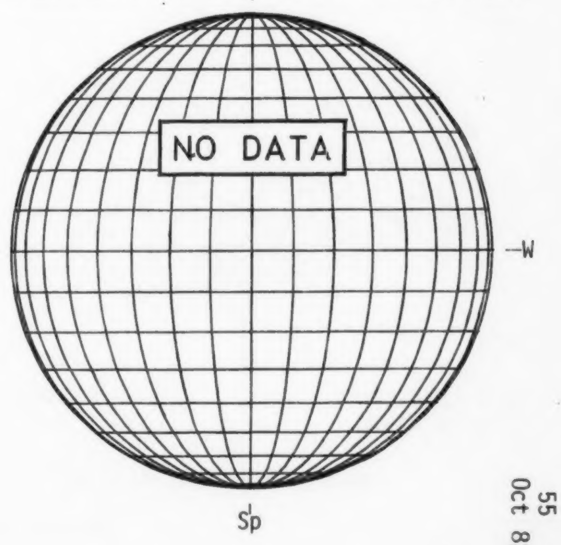
1430 UT

BOULDER SUNSPOTS


3917
3922
3931
3930
3923
3919
3934
3921
3932
Sp

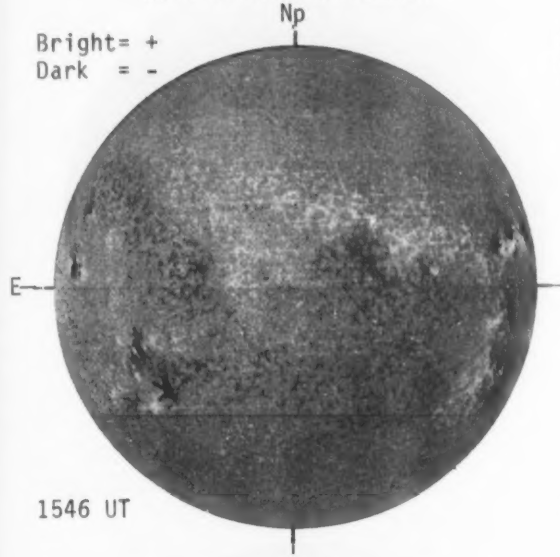
1415 UT
1430 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

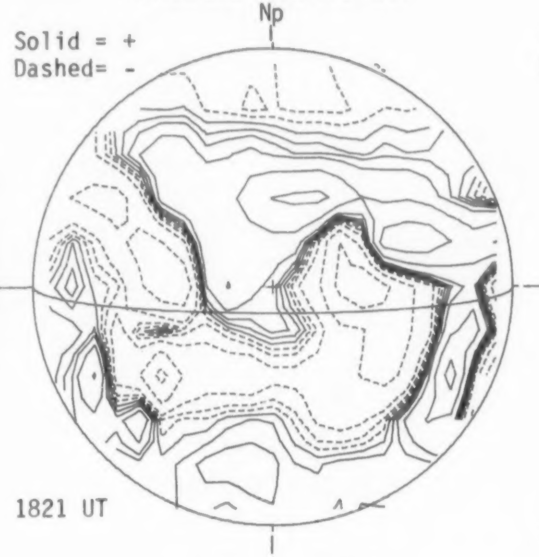


O C T O B E R 05, 1 9 8 2 (P= 26.21, B_0= 6.52, L_0= 319.34)

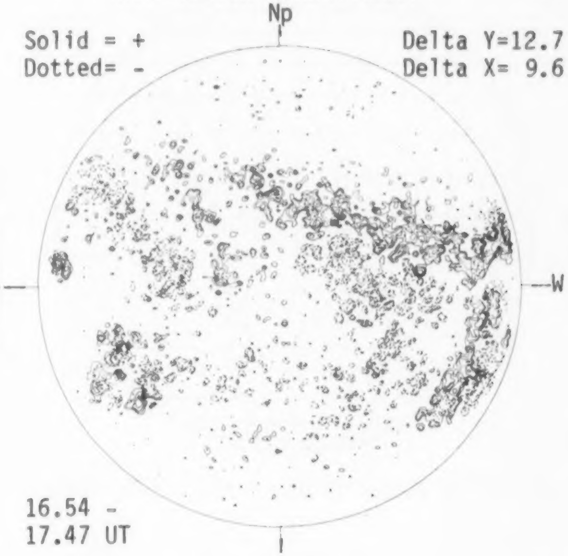
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
E
Sp
1546 UT

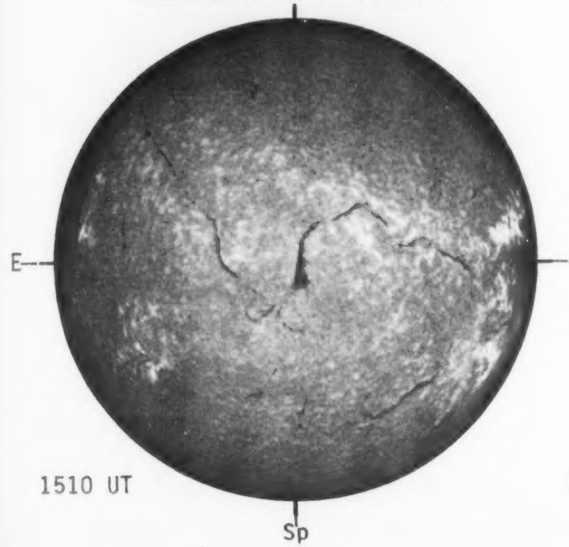
STANFORD MAGNETOGRAM



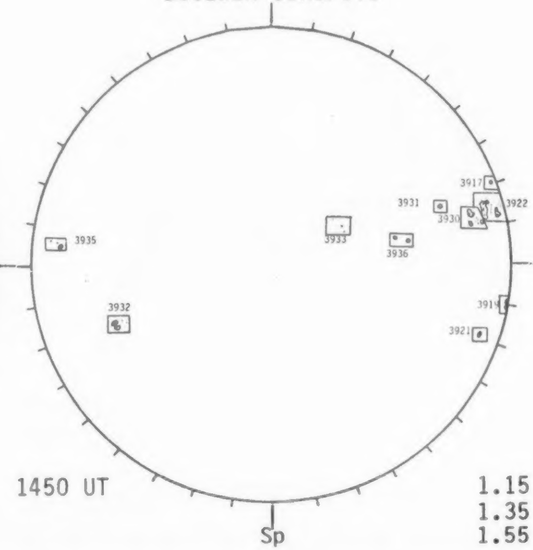
MT. WILSON MAGNETOGRAM



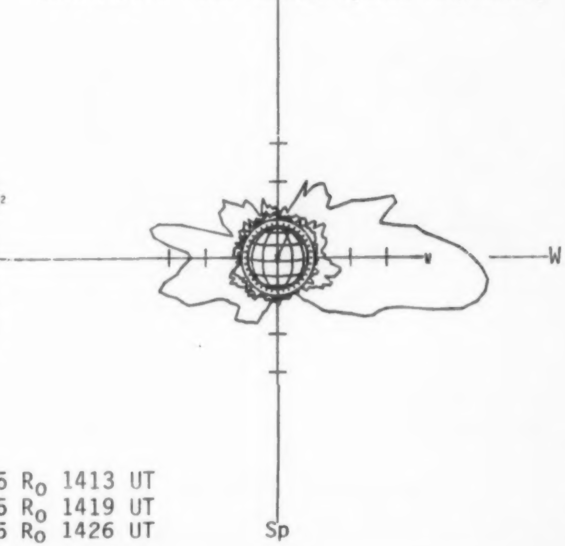
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS


3935
3932
3933
3936
3931
3930
3917
3922
3919
3921
1450 UT
Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

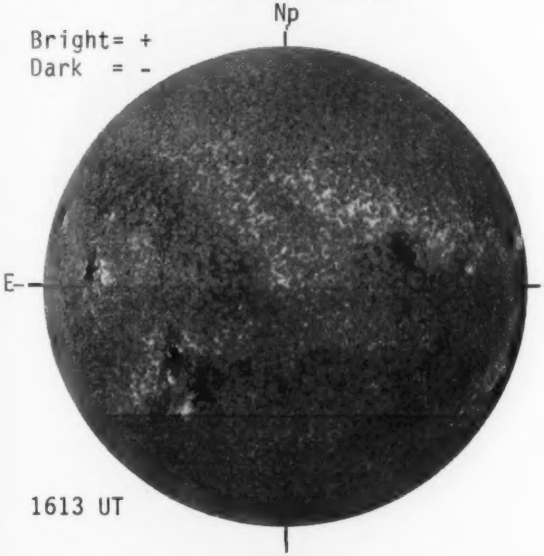


1.15 R_o 1413 UT
1.35 R_o 1419 UT
1.55 R_o 1426 UT

O C T O B E R 06, 1 9 8 2 (P= 26.24, B_o= 6.46, L_o= 306.15)

KITT PEAK MAGNETOGRAM

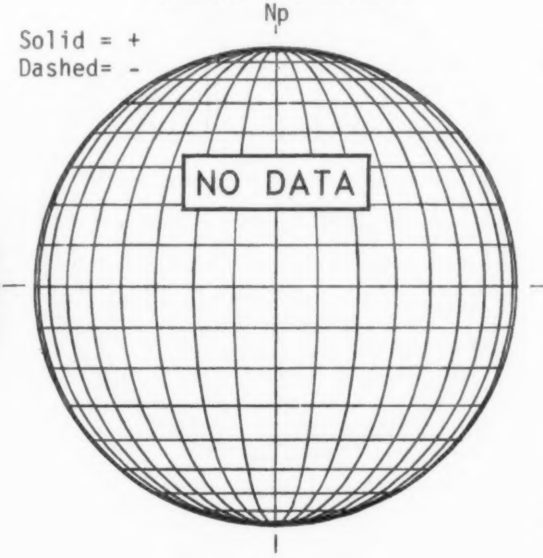
Bright= +
Dark = -



1613 UT

STANFORD MAGNETOGRAM

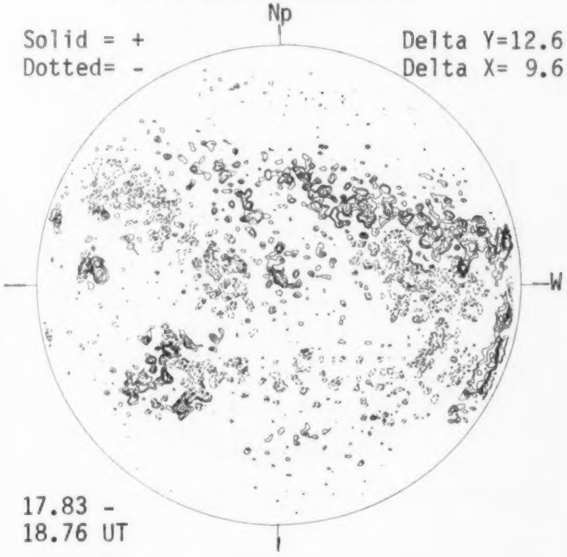
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

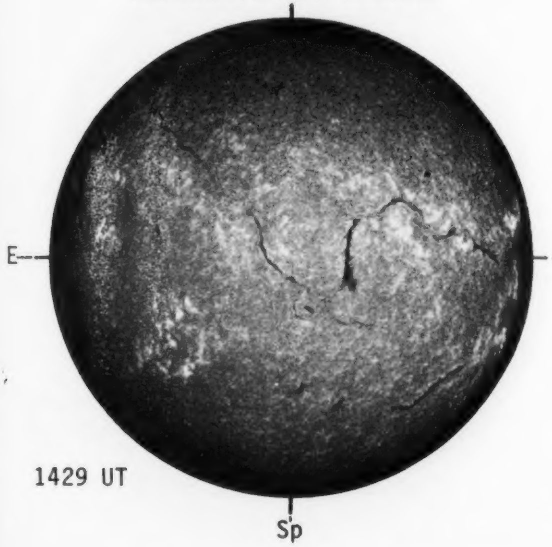
Solid = +
Dotted= -

Delta Y=12.6
Delta X= 9.6



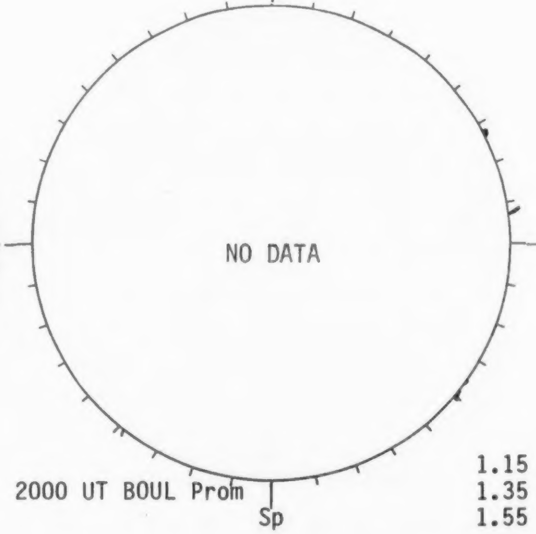
17.83 -
18.76 UT

SACRAMENTO PEAK H-ALPHA



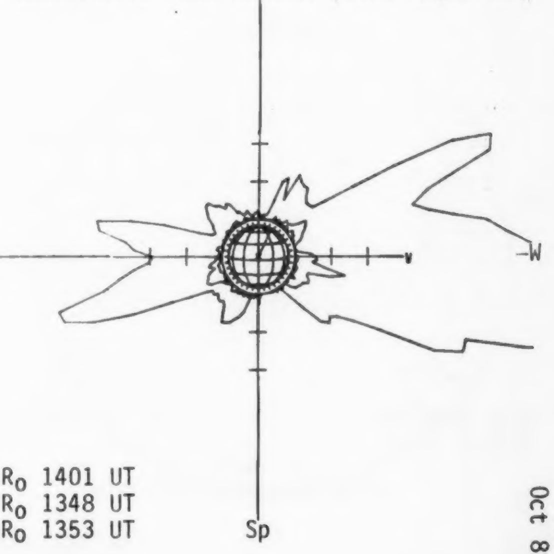
1429 UT

BOULDER SUNSPOTS



2000 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

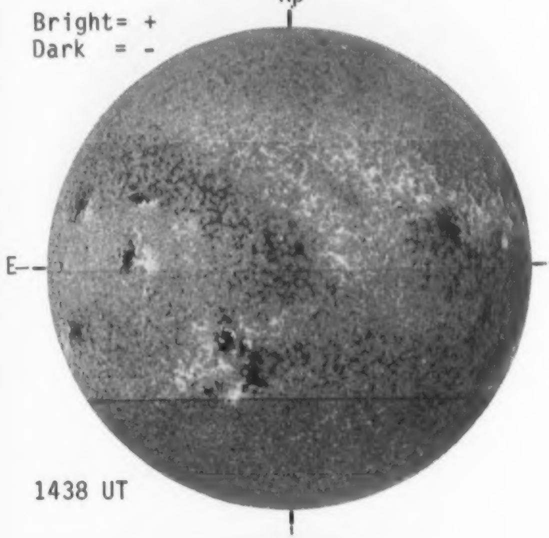


1.15 R_o 1401 UT
1.35 R_o 1348 UT
1.55 R_o 1353 UT

O C T O B E R 07, 1 9 8 2 (P= 26.27, B_O= 6.40, L_O= 292.96)

KITT PEAK MAGNETOGRAM

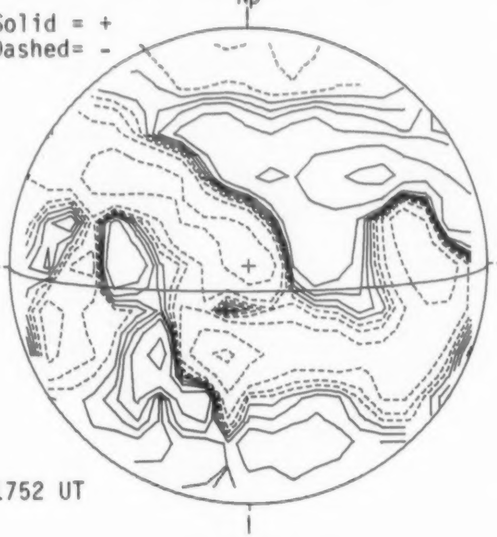
Bright= +
Dark = -



1438 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

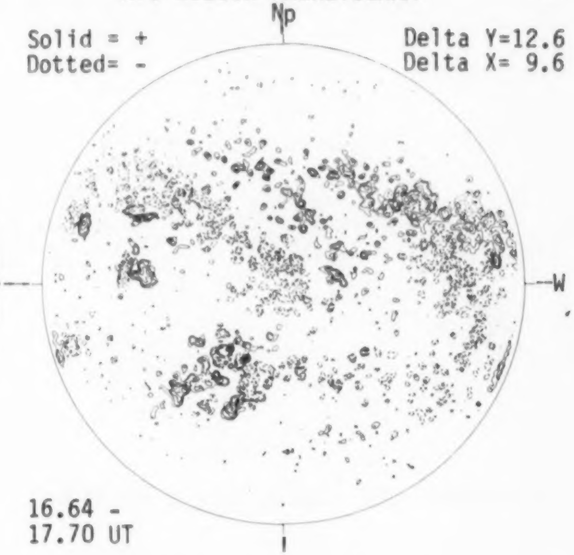


1752 UT

MT. WILSON MAGNETOGRAM

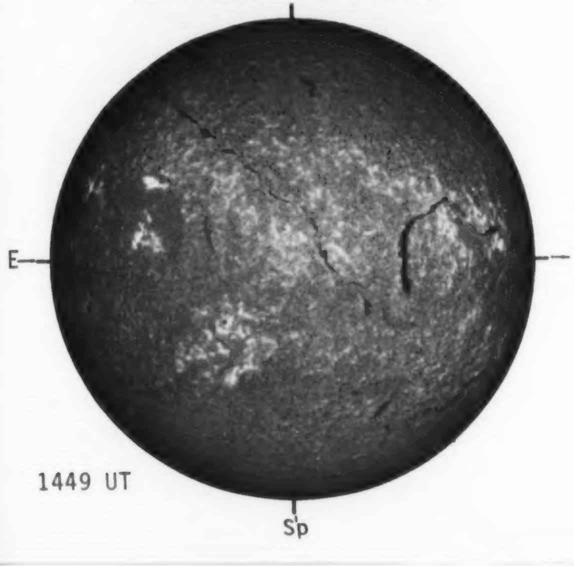
Solid = +
Dotted= -

Delta Y=12.6
Delta X= 9.6



16.64 -
17.70 UT

SACRAMENTO PEAK H-ALPHA



1449 UT

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

W

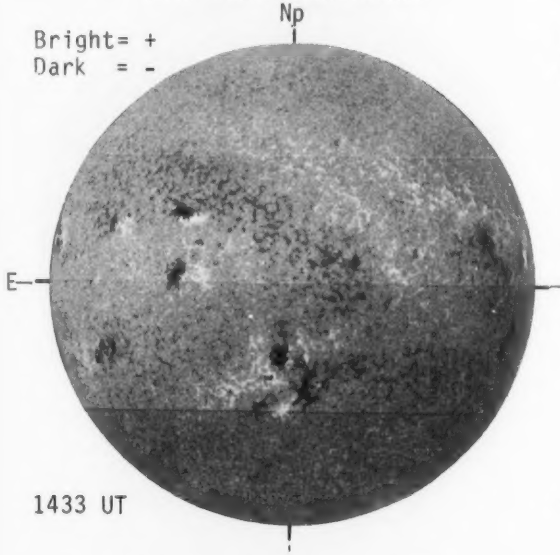
Sp

O C T O B E R 08, 1 9 8 2 (P= 26.30, B_O= 6.35, L_O= 279.76)

O C T O B E R 08, 1 9 8 2 (P= 26.30, B_0= 6.35, L_0= 279.76)

KITT PEAK MAGNETOGRAM

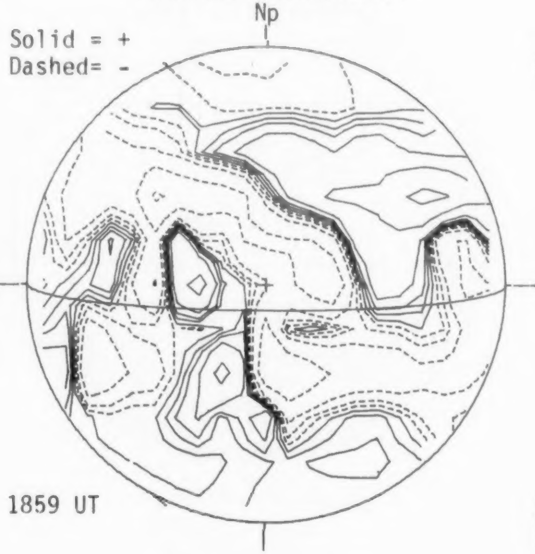
Bright= +
Dark = -



1433 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

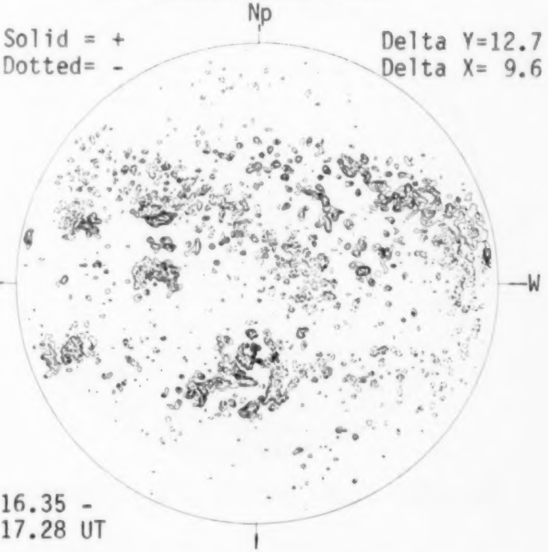


1859 UT

MT. WILSON MAGNETOGRAM

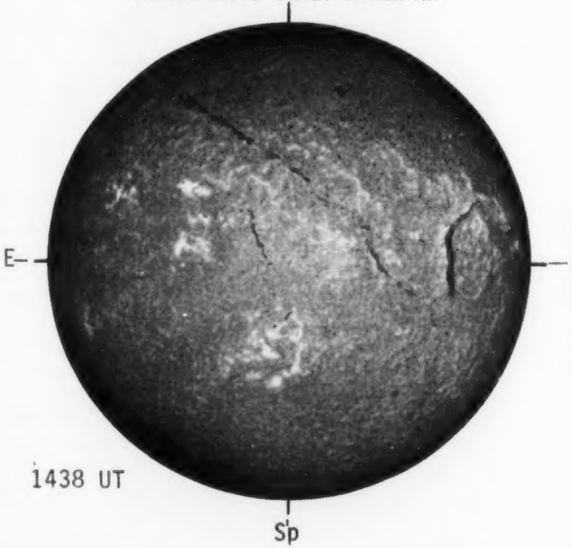
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



16.35 -
17.28 UT

SACRAMENTO PEAK H-ALPHA



1438 UT

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

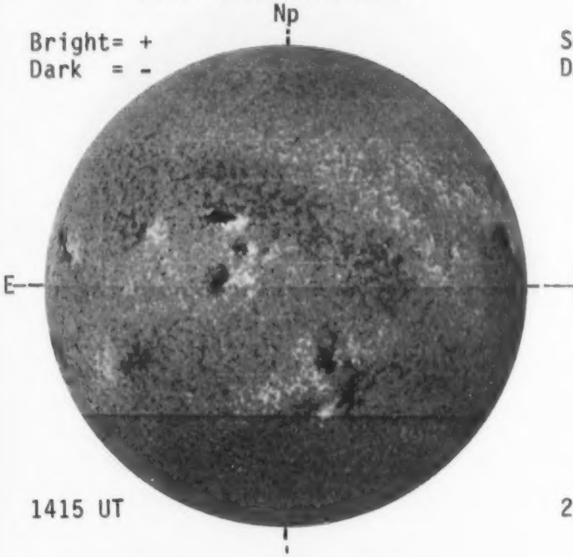
W

Sp

O C T O B E R 09, 1 9 8 2 (P= 26.31, B_o= 6.28, L_o= 266.57)

KITT PEAK MAGNETOGRAM

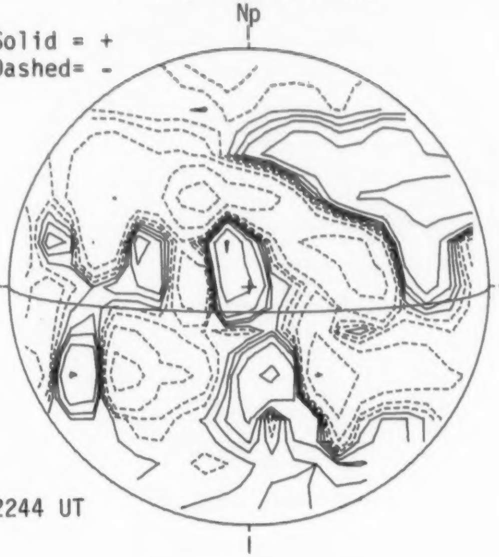
Bright= +
Dark = -



1415 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

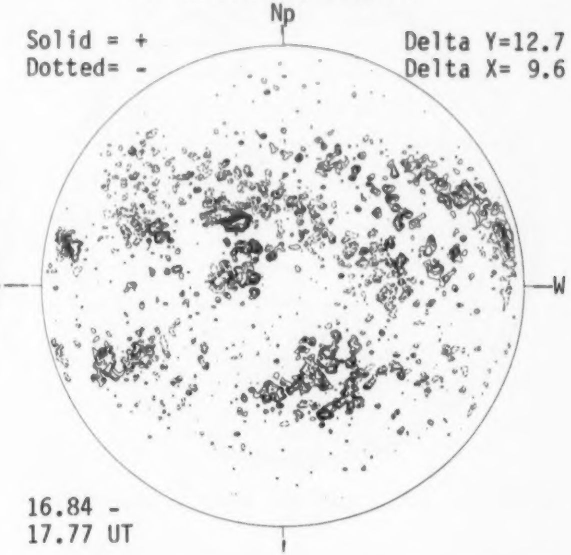


2244 UT

MT. WILSON MAGNETOGRAM

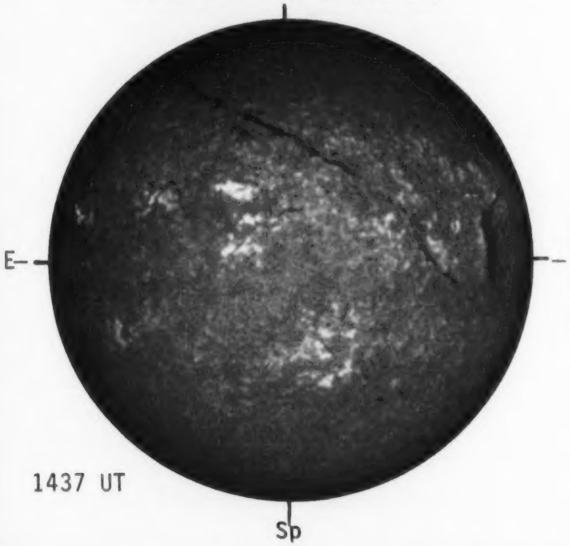
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



16.84 -
17.77 UT

SACRAMENTO PEAK H-ALPHA



1437 UT

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

Sp

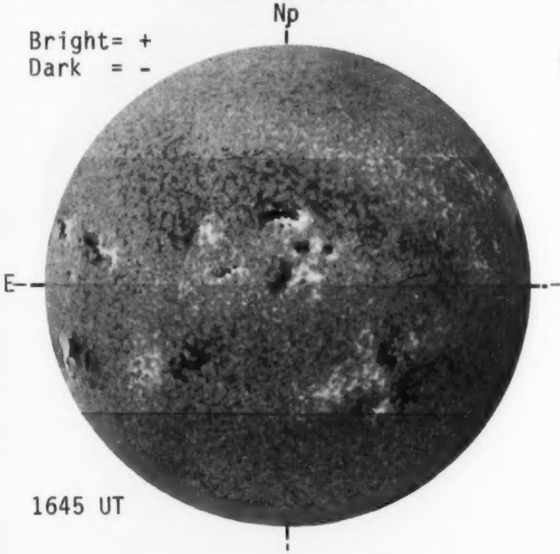
W

O C T O B E R 10, 1 9 8 2 (P= 26.32, B_o= 6.22, L_o= 253.38)

KITT PEAK MAGNETOGRAM STANFORD MAGNETOGRAM MT. WILSON MAGNETOGRAM

OCTOBER 10, 1982 (P= 26.32, B_0= 6.22, L_0= 253.38)

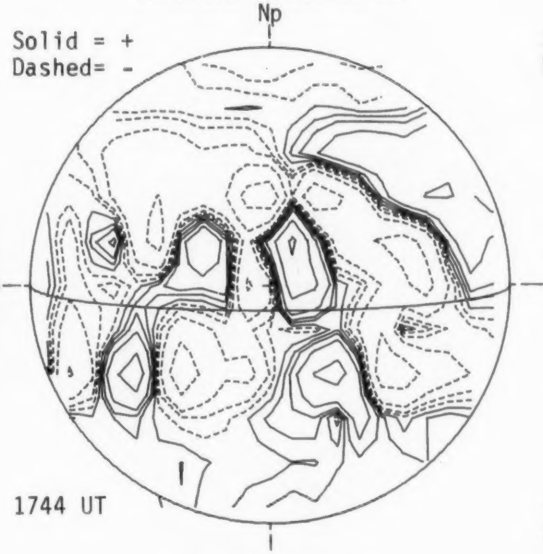
KITT PEAK MAGNETOGRAM



Bright= +
Dark = -

1645 UT

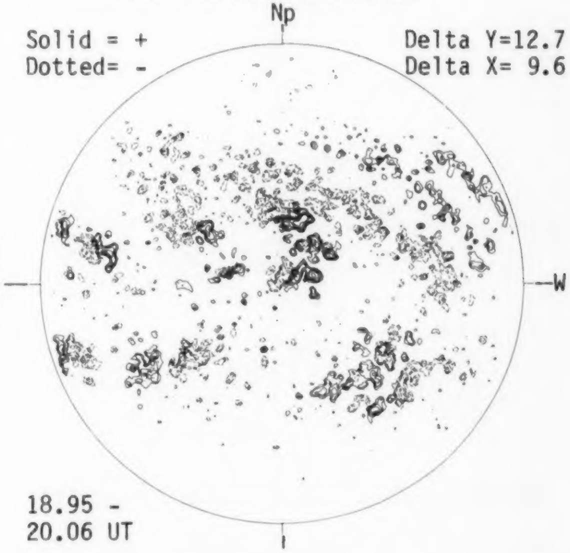
STANFORD MAGNETOGRAM



Solid = +
Dashed= -

1744 UT

MT. WILSON MAGNETOGRAM

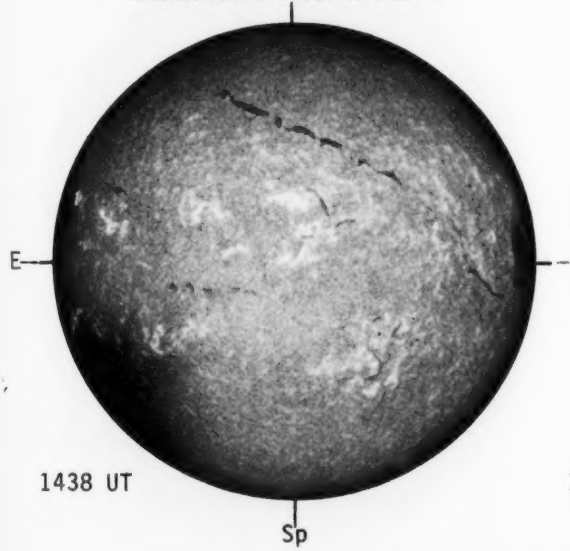


Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

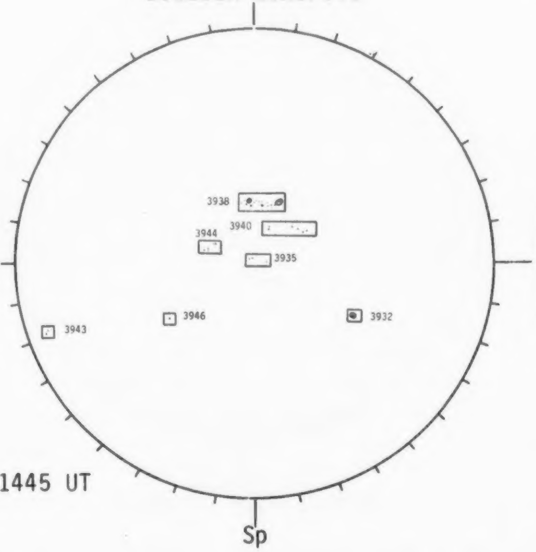
18.95 -
20.06 UT

SACRAMENTO PEAK H-ALPHA



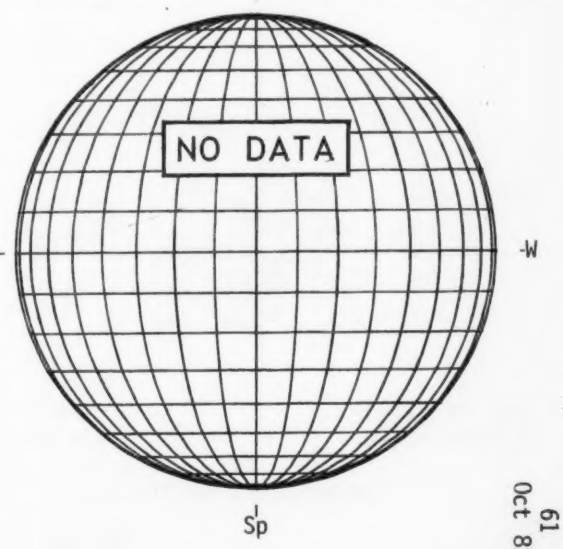
1438 UT

BOULDER SUNSPOTS


3938
3940
3944
3935
3943
3946
3932
Sp

1445 UT

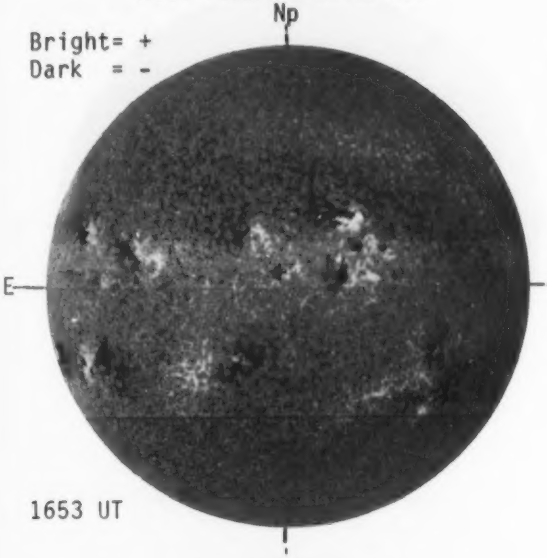
SACRAMENTO PEAK CORONA (5303 Angstrom)



OCTOBER 11, 1982 (P= 26.32, B_0= 6.16, L_0= 240.18)

KITT PEAK MAGNETOGRAM

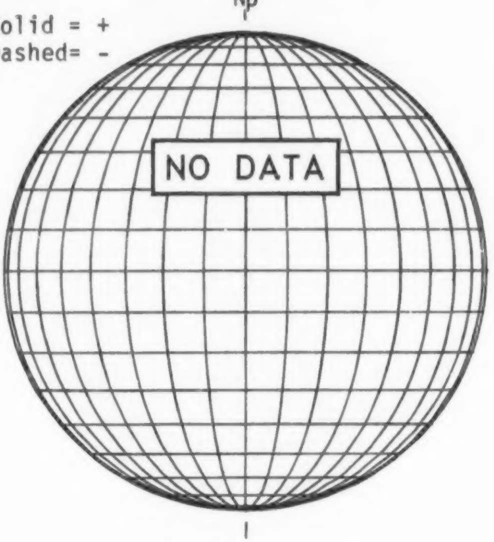
Bright= +
Dark = -



1653 UT

STANFORD MAGNETOGRAM

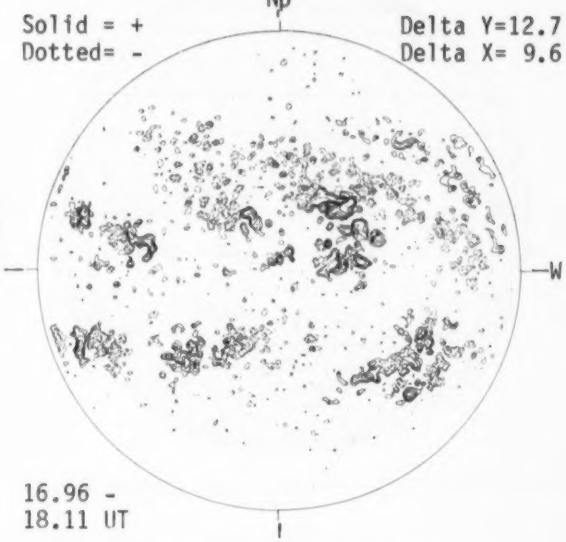
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

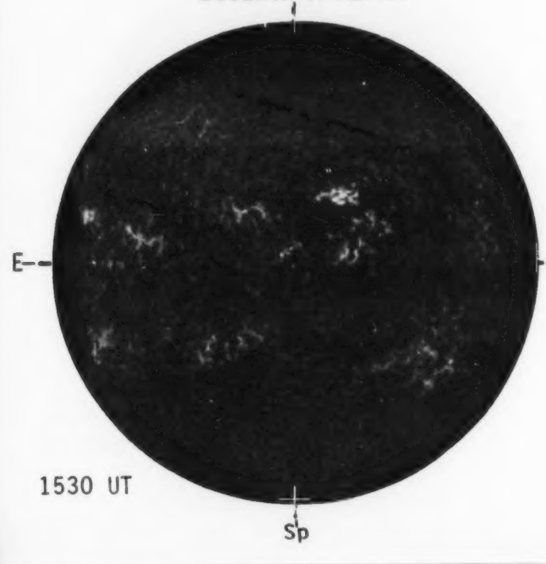
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



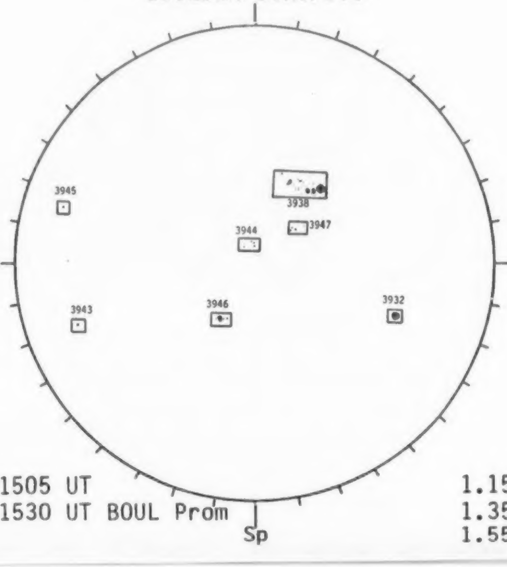
16.96 -
18.11 UT

BOULDER H-ALPHA



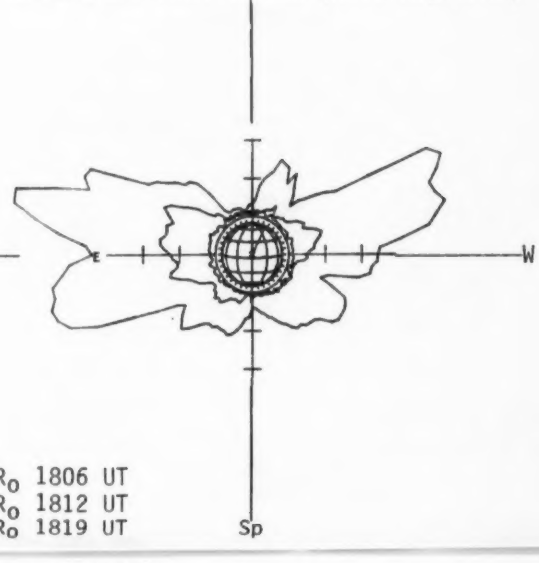
1530 UT

BOULDER SUNSPOTS


3945
3938
3947
3944
3943
3946
3932
Sp

1505 UT
1530 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_0 1806 UT
1.35 R_0 1812 UT
1.55 R_0 1819 UT

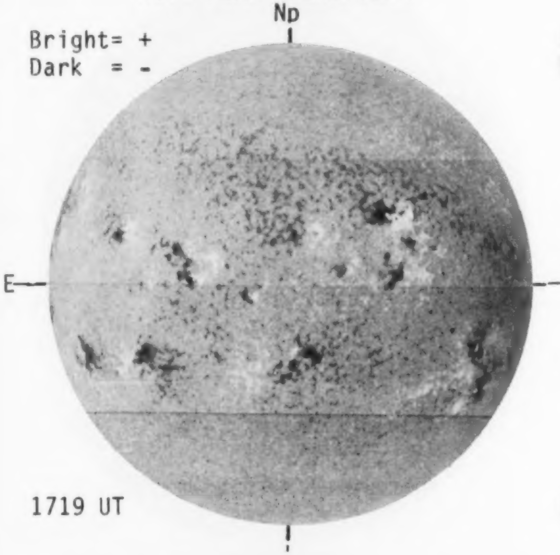
OCTOBER 12, 1982 (P= 26.32, B_0= 6.09, L_0= 226.99)

1530 UT BOUL Prom

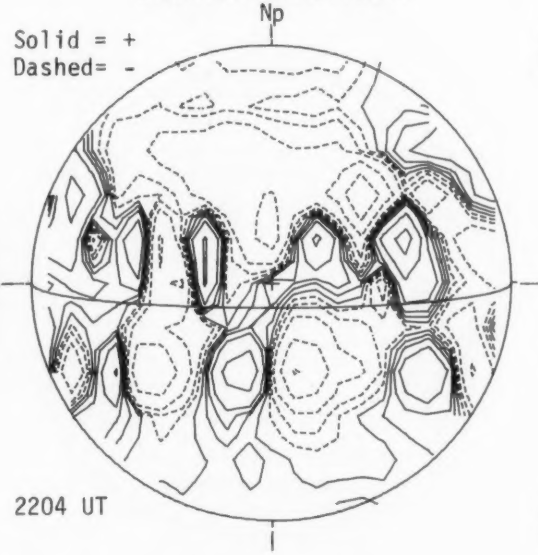
1.35 R_o 1812 UT
1.55 R_o 1819 UT

OCTOBER 12, 1982 (P= 26.32, B_o= 6.09, L_o= 226.99)

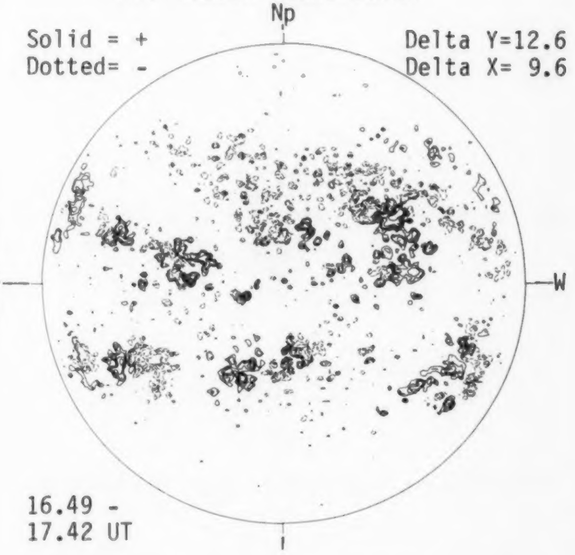
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
E
1719 UT

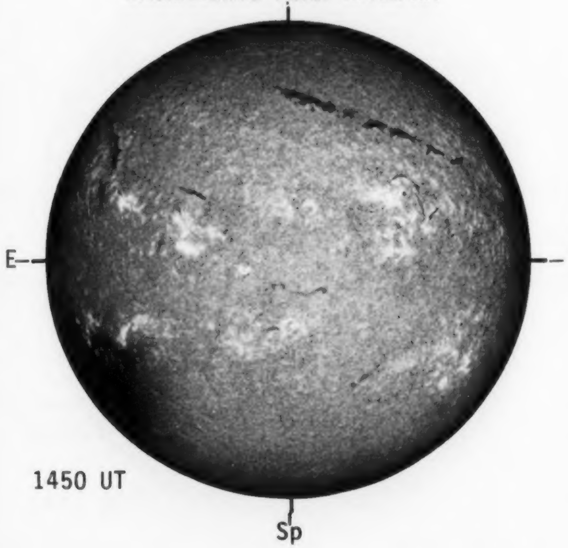
STANFORD MAGNETOGRAM



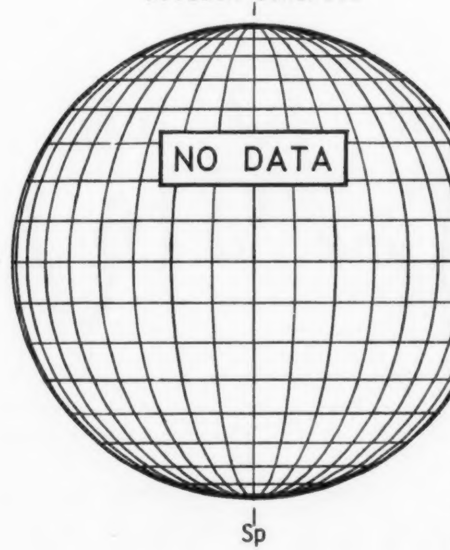
MT. WILSON MAGNETOGRAM



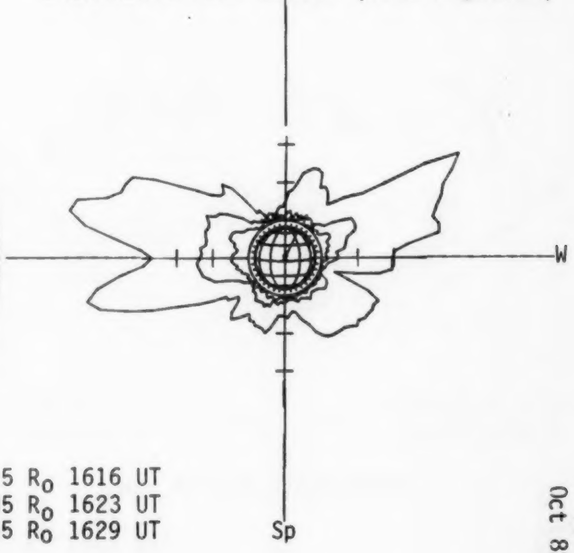
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)

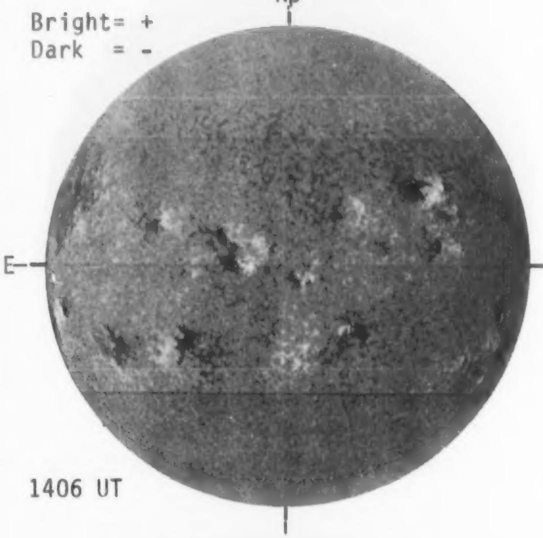


1.15 R_o 1616 UT
1.35 R_o 1623 UT
1.55 R_o 1629 UT

OCTOBER 13, 1982 (P= 26.30, B_0= 6.02, L_0= 213.80)

KITT PEAK MAGNETOGRAM

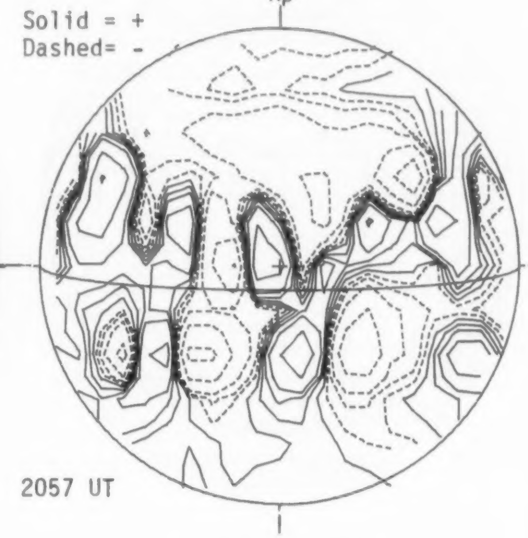
Bright= +
Dark = -



1406 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

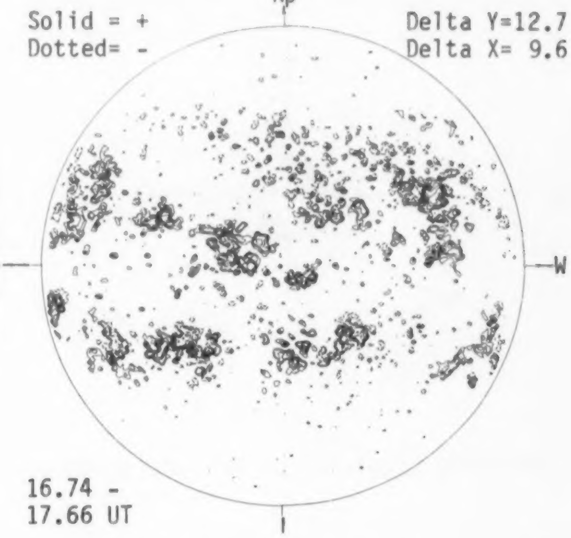


2057 UT

MT. WILSON MAGNETOGRAM

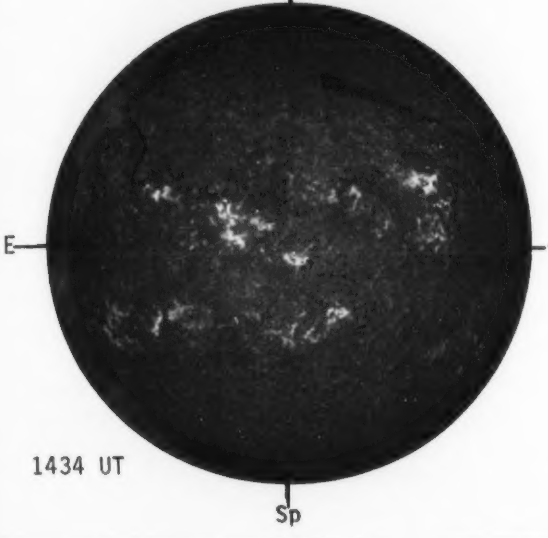
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



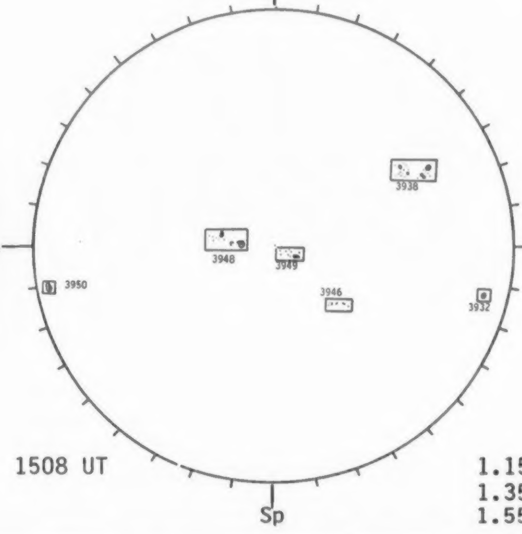
16.74 -
17.66 UT

SACRAMENTO PEAK H-ALPHA



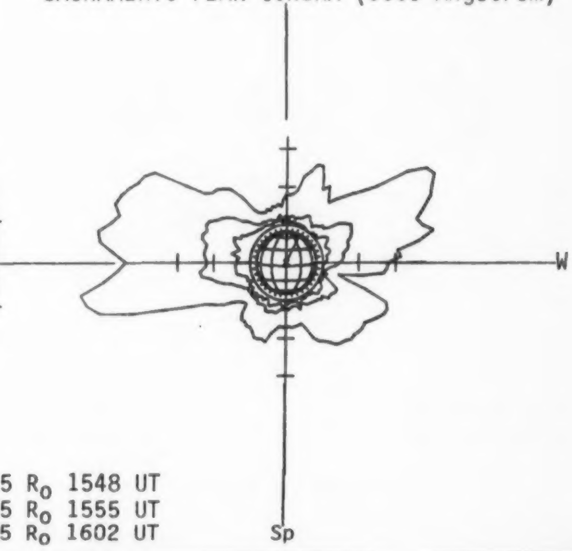
1434 UT

BOULDER SUNSPOTS


3938
3948
3949
3946
3950
3932
Sp

1508 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)



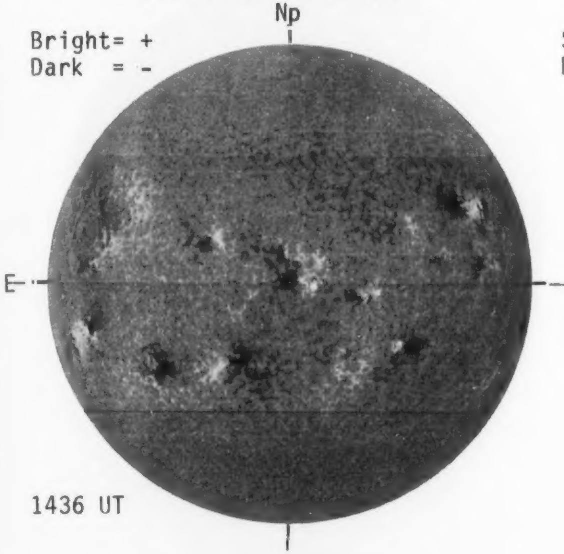
1.15 R_0 1548 UT
1.35 R_0 1555 UT
1.55 R_0 1602 UT

OCTOBER 14, 1982 (P= 26.28, B_0= 5.95, L_0= 200.61)

1.35 R_o 1555 UT
1.55 R_o 1602 UT

O C T O B E R 14, 1 9 8 2 (P= 26.28, B_o= 5.95, L_o= 200.61)

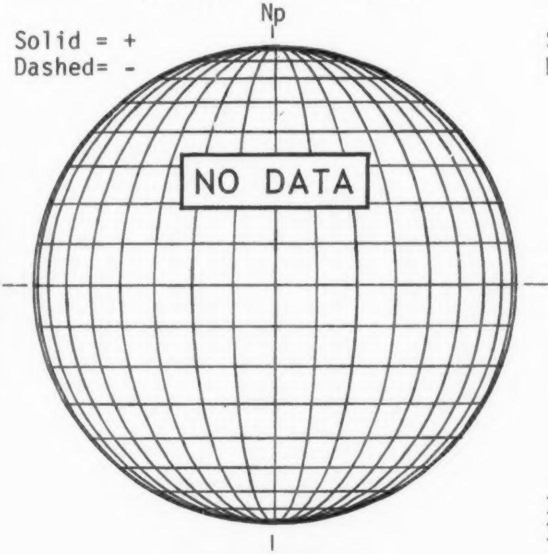
KITT PEAK MAGNETOGRAM



Bright= +
Dark = -

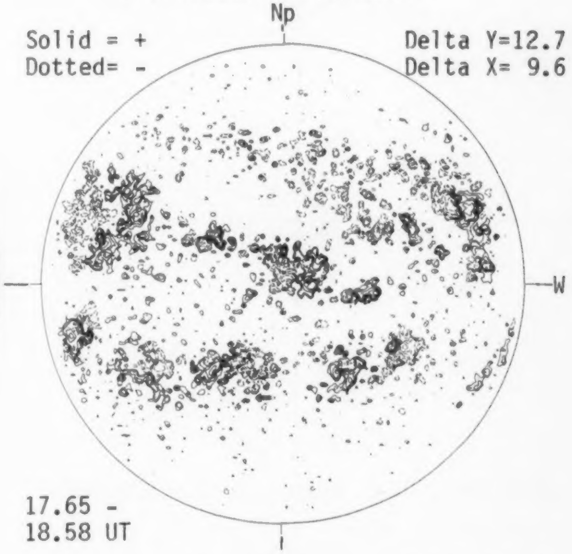
1436 UT

STANFORD MAGNETOGRAM



Solid = +
Dashed= -

MT. WILSON MAGNETOGRAM

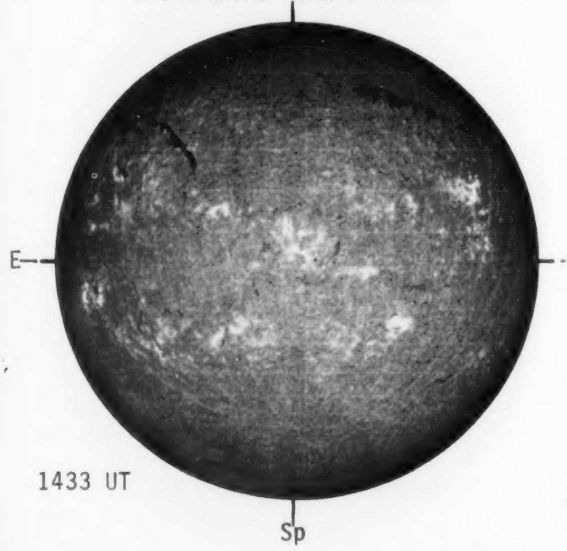


Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

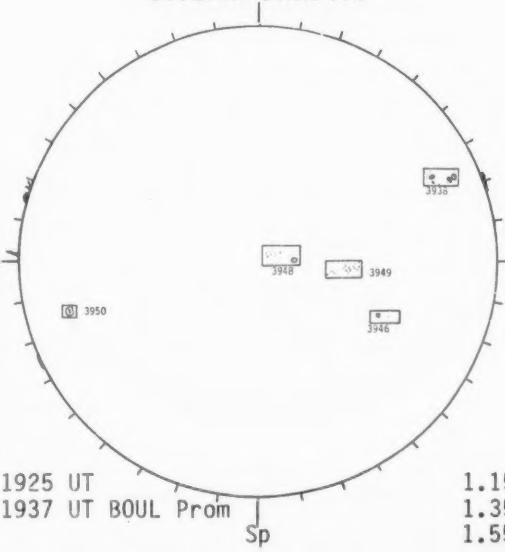
17.65 -
18.58 UT

SACRAMENTO PEAK H-ALPHA



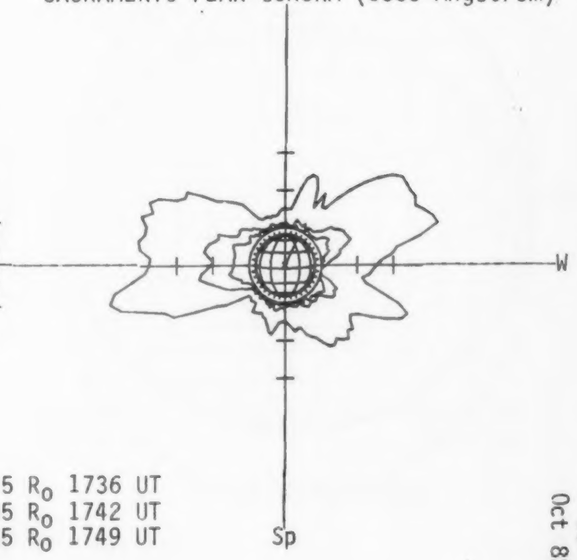
1433 UT

BOULDER SUNSPOTS


3938
3948
3949
3946
3950
Sp

1925 UT
1937 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

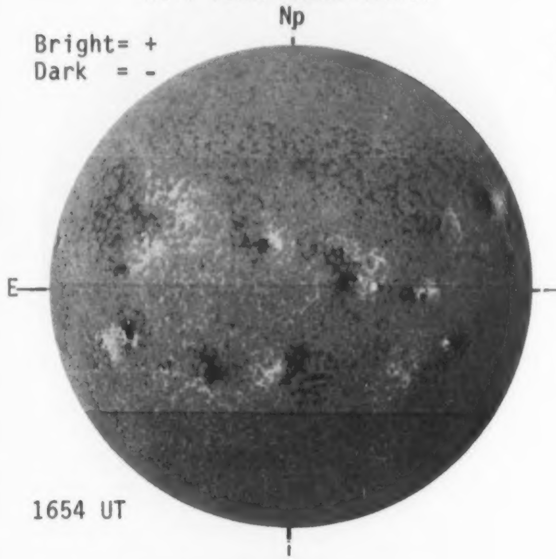


1.15 R_o 1736 UT
1.35 R_o 1742 UT
1.55 R_o 1749 UT

OCTOBER 15, 1982 (P= 26.25, B_0= 5.88, L_0= 187.42)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



1654 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

NO DATA

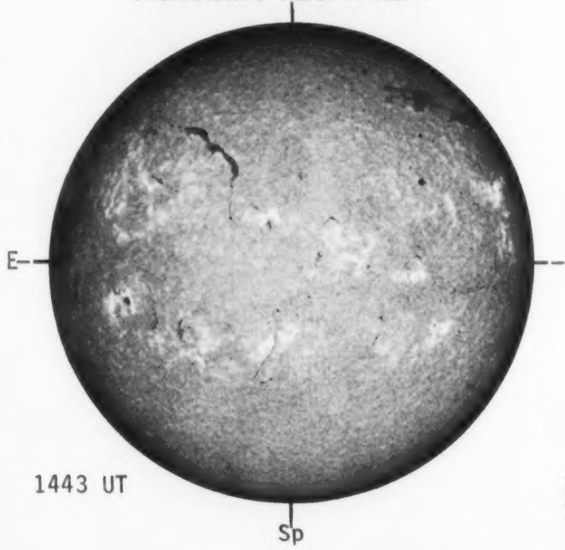
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Delta Y=
Delta X=

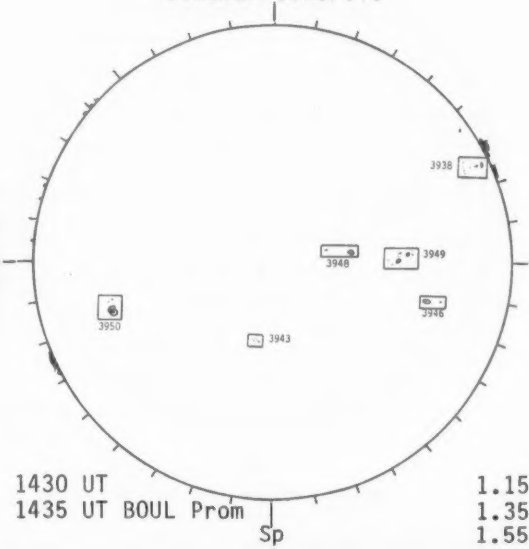
NO DATA

SACRAMENTO PEAK H-ALPHA



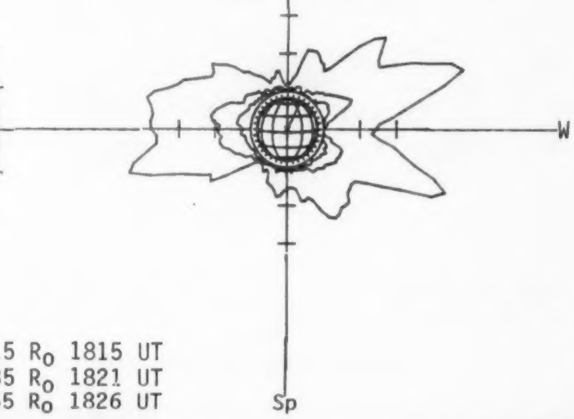
1443 UT

BOULDER SUNSPOTS


3938
3949
3948
3946
3950
3943
Sp

1430 UT
1435 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

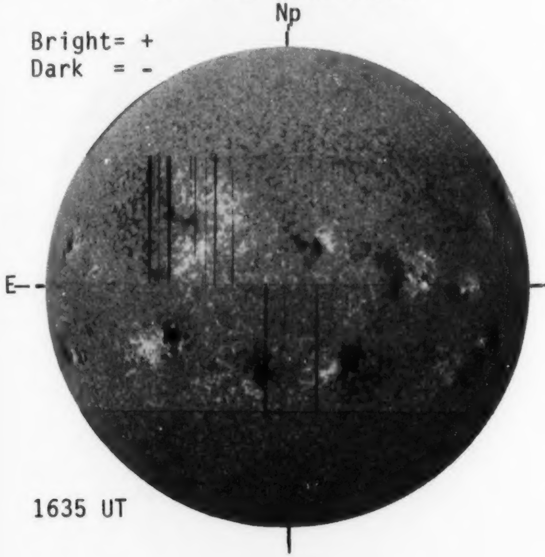


1.15 R_o 1815 UT
1.35 R_o 1821 UT
1.55 R_o 1826 UT

O C T O B E R 16, 1 9 8 2 (P= 26.22, B_0= 5.80, L_0= 174.23)

KITT PEAK MAGNETOGRAM

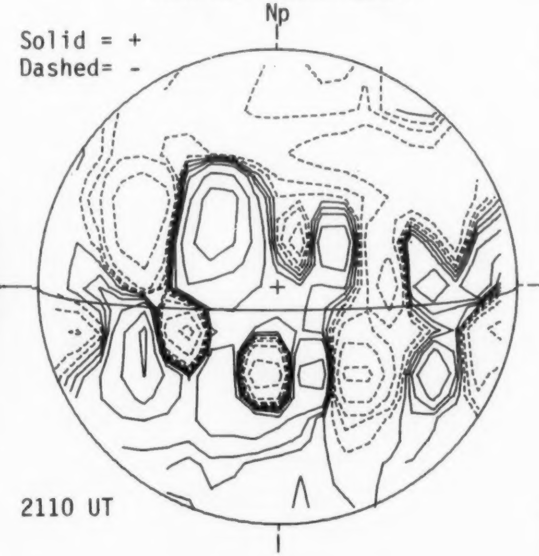
Bright= +
Dark = -



1635 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

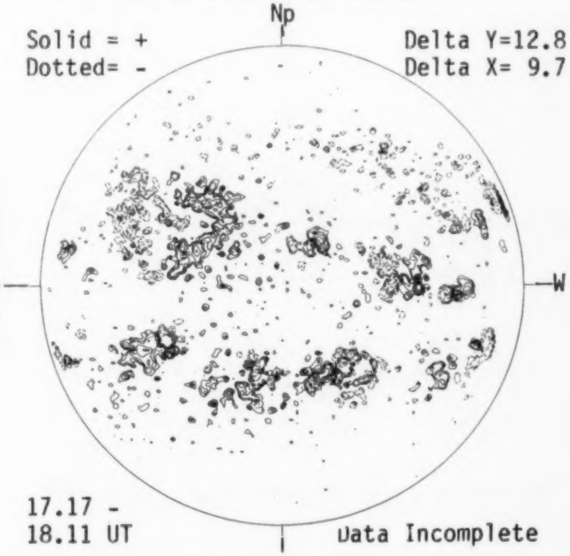


2110 UT

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

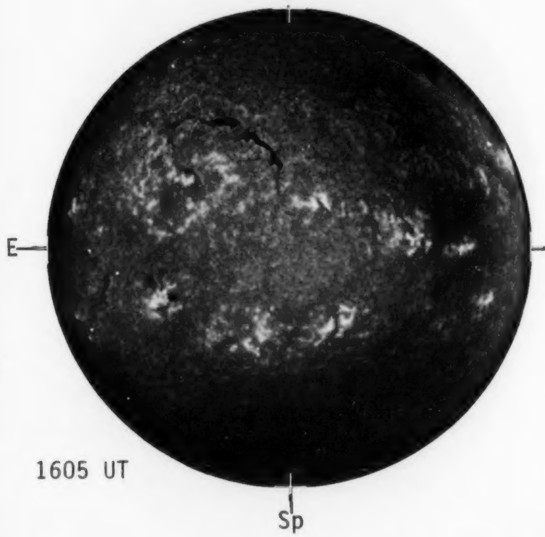
Delta Y=12.8
Delta X= 9.7



17.17 -
18.11 UT

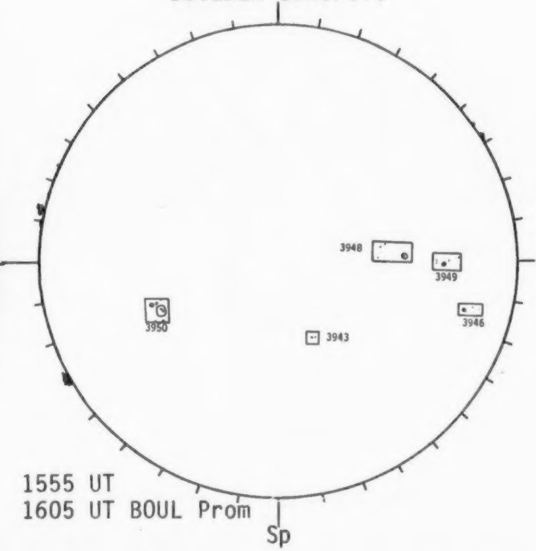
Data Incomplete

BOULDER H-ALPHA



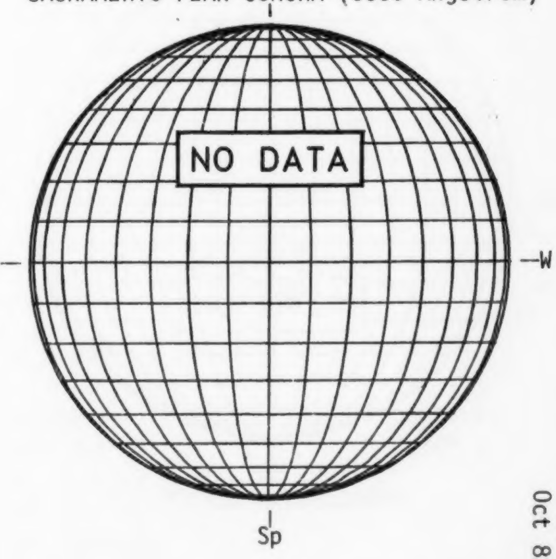
1605 UT

BOULDER SUNSPOTS


3948
3949
3950
3943
3946
Sp

1555 UT
1605 UT BOUL Prom

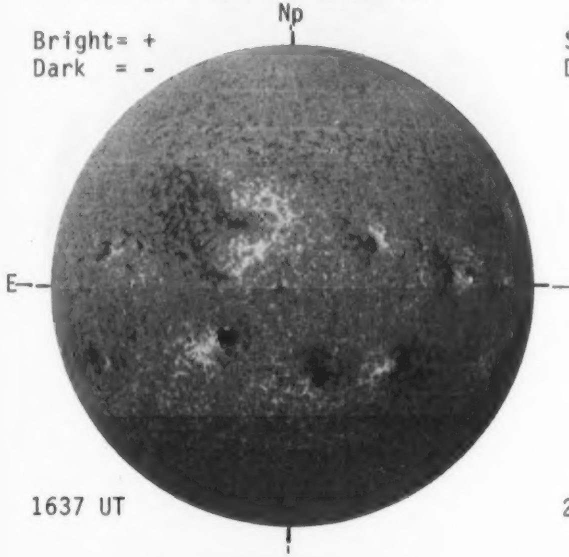
SACRAMENTO PEAK CORONA (5303 Angstrom)



O C T O B E R 17, 1 9 8 2 (P= 26.17, B_0= 5.72, L_0= 161.04)

KITT PEAK MAGNETOGRAM

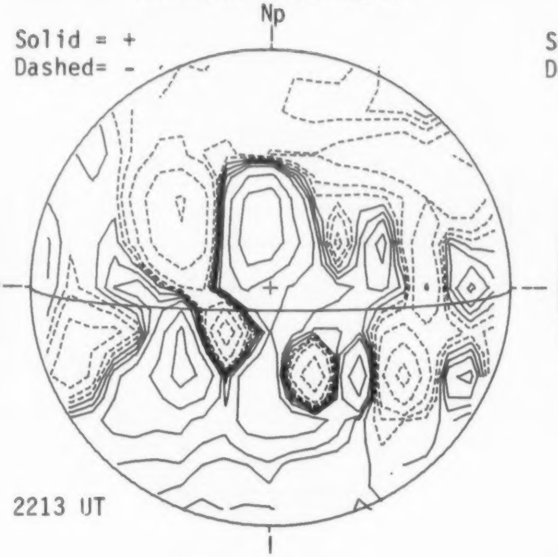
Bright= +
Dark = -



1637 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

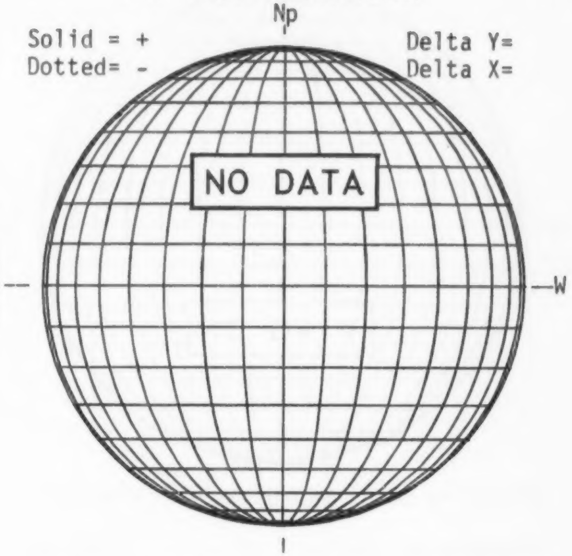


2213 UT

MT. WILSON MAGNETOGRAM

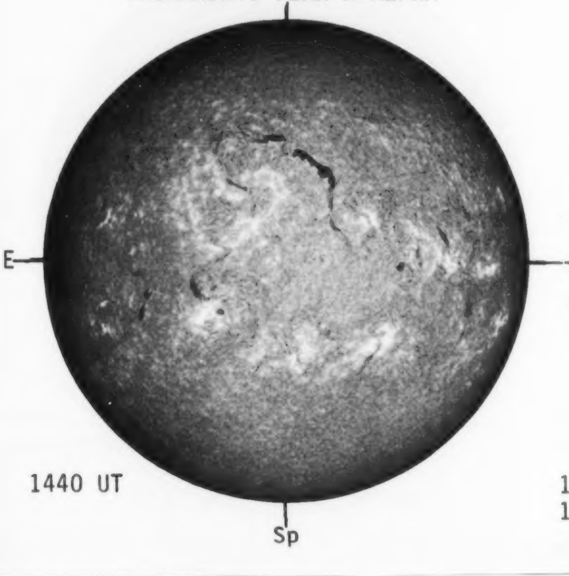
Solid = +
Dotted= -

Delta Y=
Delta X=



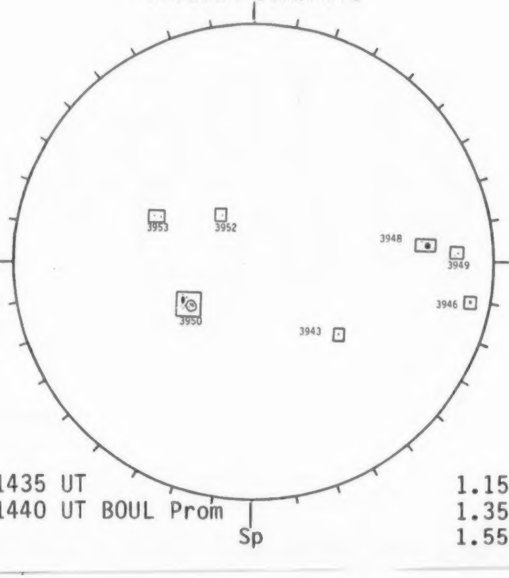
O C T O B E R 18, 1 9 8 2 (P= 26.12, B_0= 5.65, L_0= 147.85)

SACRAMENTO PEAK H-ALPHA



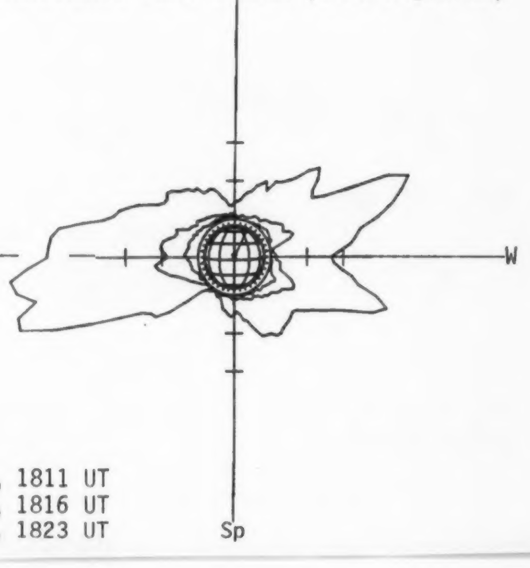
1440 UT

BOULDER SUNSPOTS


3953
3952
3948
3949
3946
3950
3943
Sp

1435 UT
1440 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

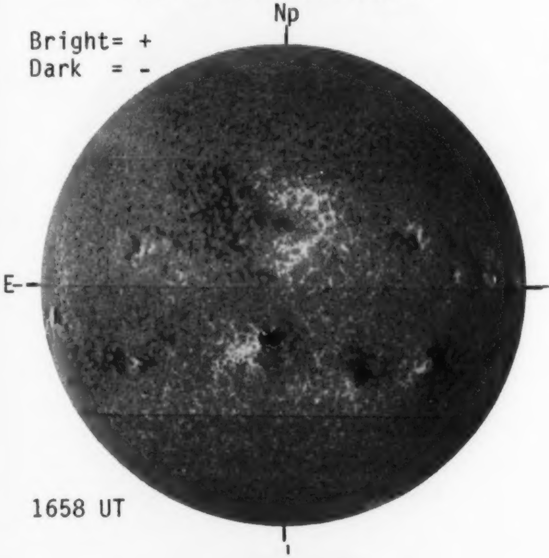


1.15 R_0 1811 UT
1.35 R_0 1816 UT
1.55 R_0 1823 UT

O C T O B E R 18, 1 9 8 2 (P= 26.12, B_o= 5.65, L_o= 147.85)

KITT PEAK MAGNETOGRAM

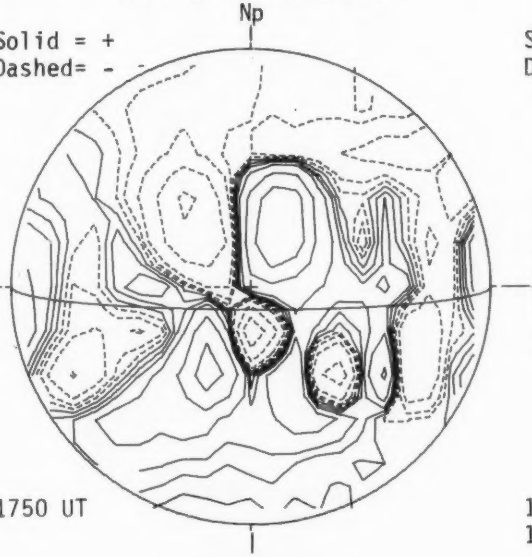
Bright= +
Dark = -



1658 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

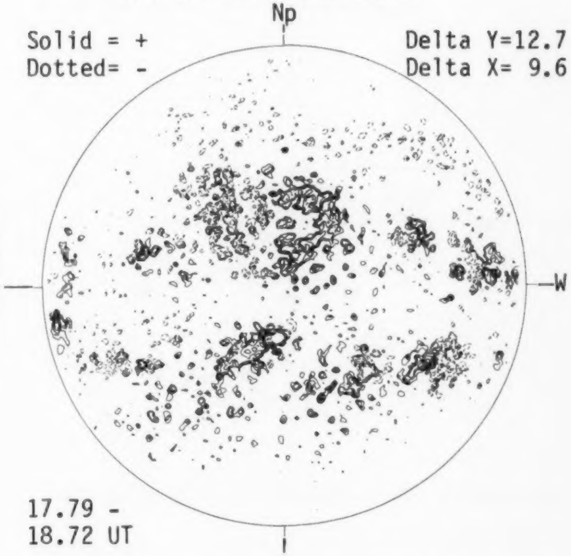


1750 UT

MT. WILSON MAGNETOGRAM

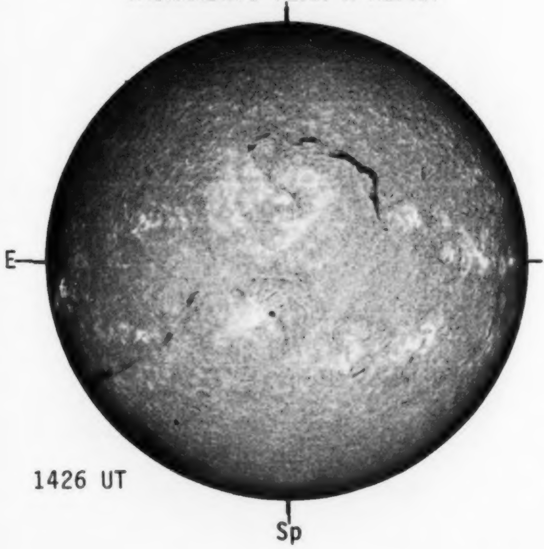
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



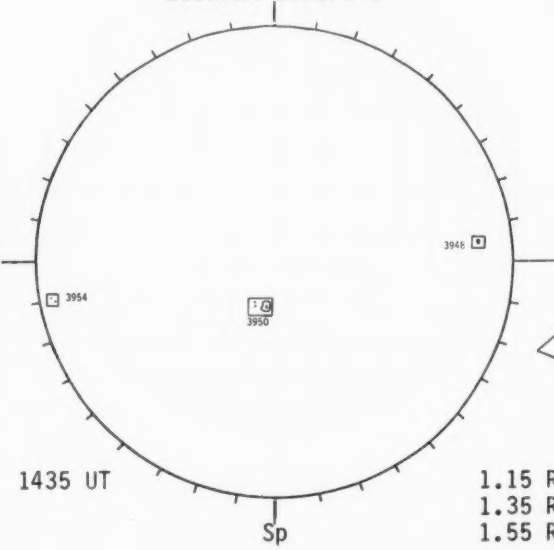
17.79 -
18.72 UT

SACRAMENTO PEAK H-ALPHA



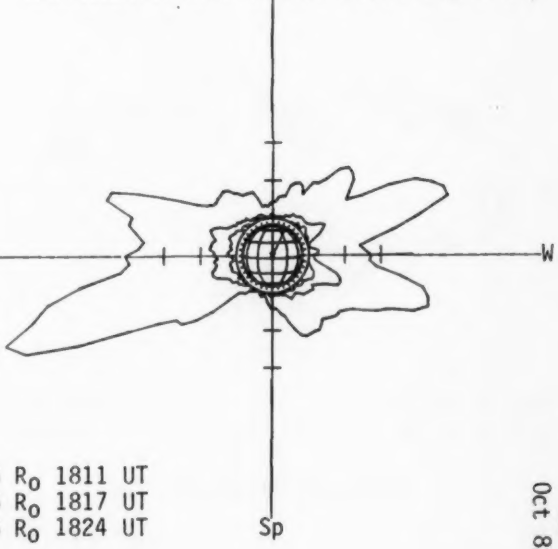
1426 UT

BOULDER SUNSPOTS



1435 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

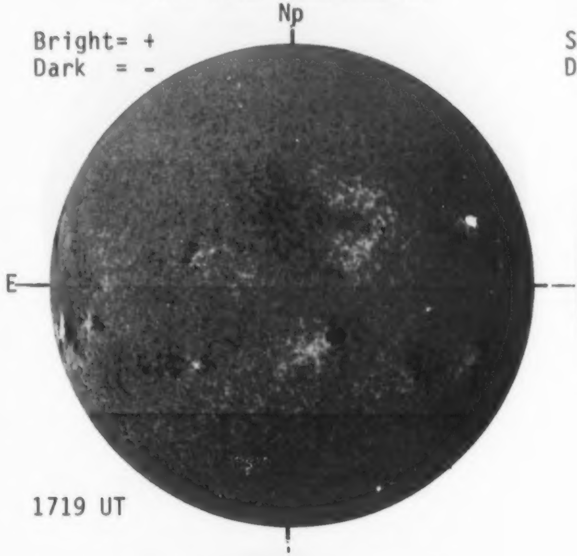


1.15 R_o 1811 UT
1.35 R_o 1817 UT
1.55 R_o 1824 UT

O C T O B E R 19, 1 9 8 2 (P= 26.06, B_0= 5.57, L_0= 134.66)

KITT PEAK MAGNETOGRAM

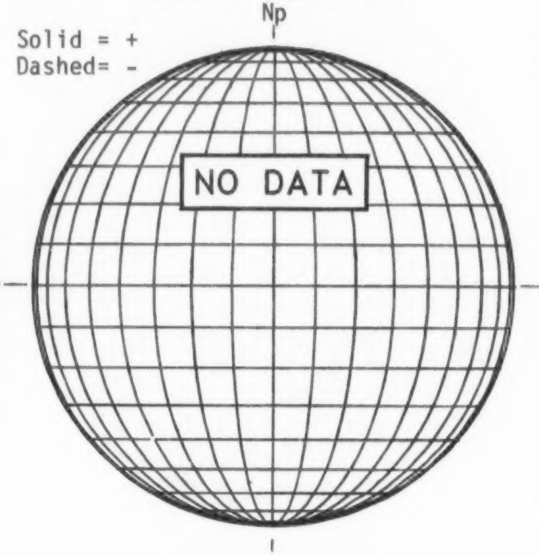
Bright= +
Dark = -



1719 UT

STANFORD MAGNETOGRAM

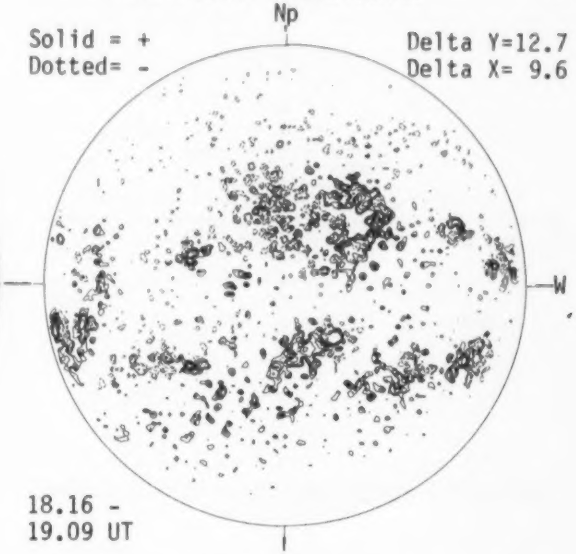
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

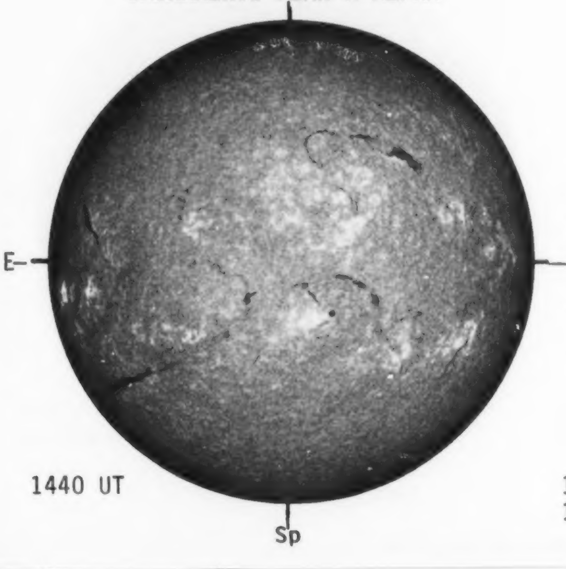
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



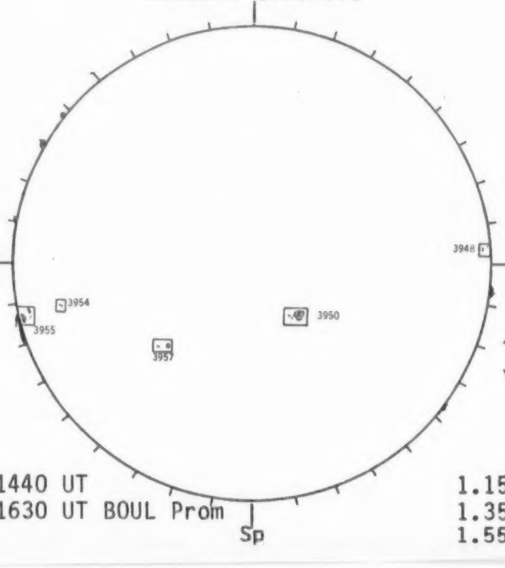
18.16 -
19.09 UT

SACRAMENTO PEAK H-ALPHA



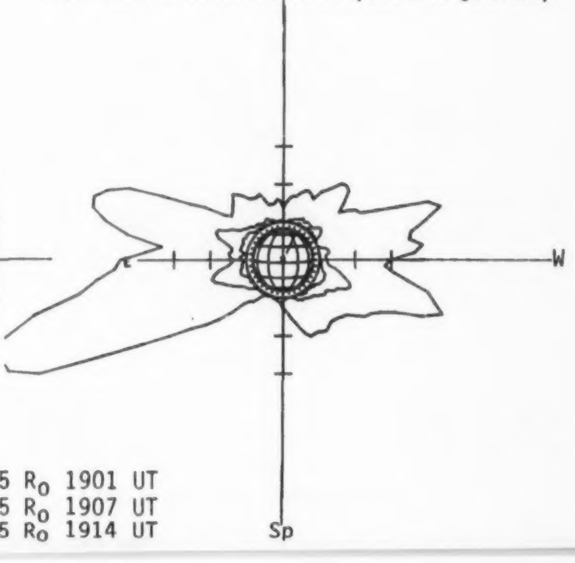
1440 UT

BOULDER SUNSPOTS


3948
3950
3954
3955
3957
Sp

1440 UT
1630 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



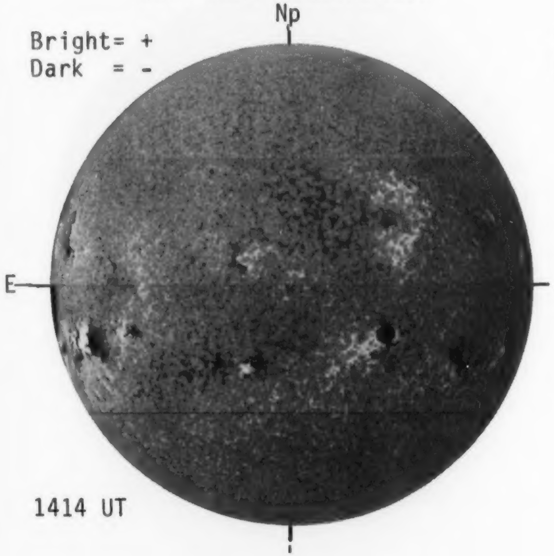
1.15 R_0 1901 UT
1.35 R_0 1907 UT
1.55 R_0 1914 UT

O C T O B E R 20, 1 9 8 2 (P= 25.99, B_0= 5.49, L_0= 121.47)

O C T O B E R 20, 1 9 8 2 (P= 25.99, B_0= 5.49, L_0= 121.47)

KITT PEAK MAGNETOGRAM

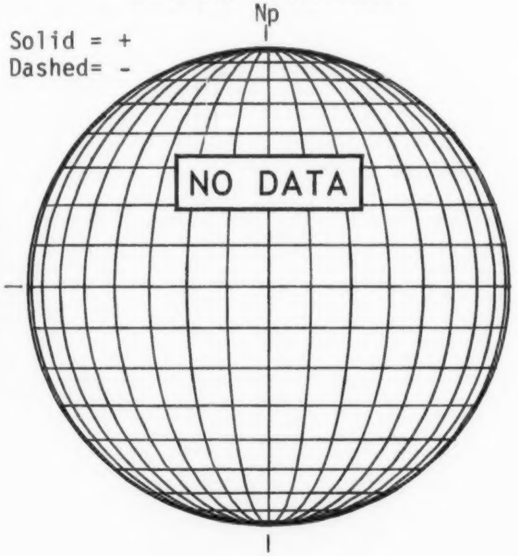
Bright= +
Dark = -



1414 UT

STANFORD MAGNETOGRAM

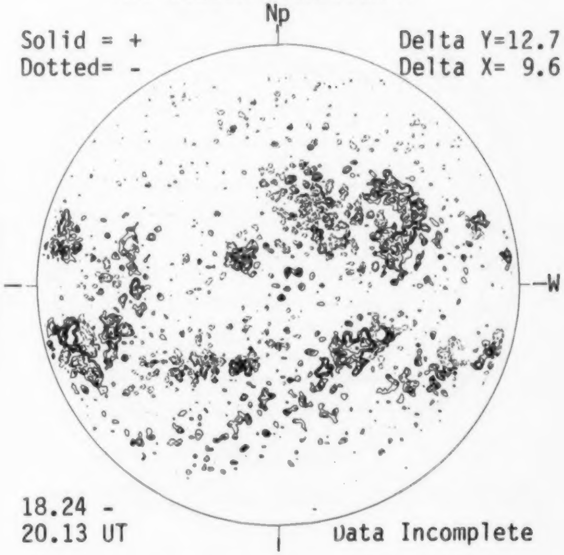
Solid = +
Dashed= -



MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

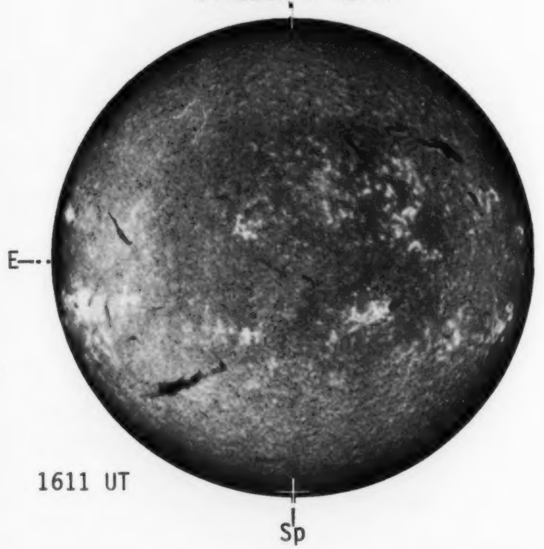
Delta Y=12.7
Delta X= 9.6



18.24 -
20.13 UT

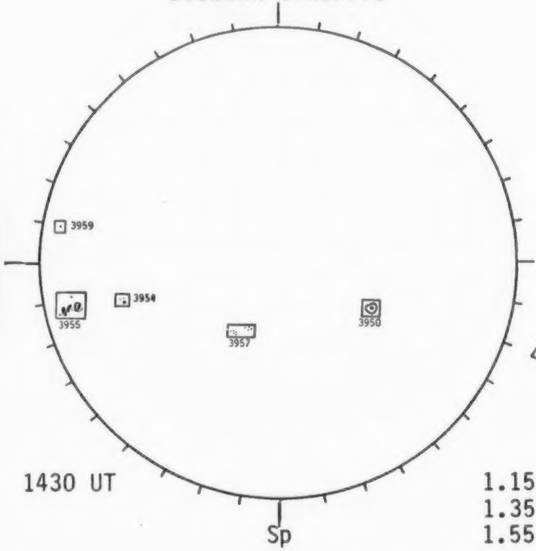
Data Incomplete

BOULDER H-ALPHA



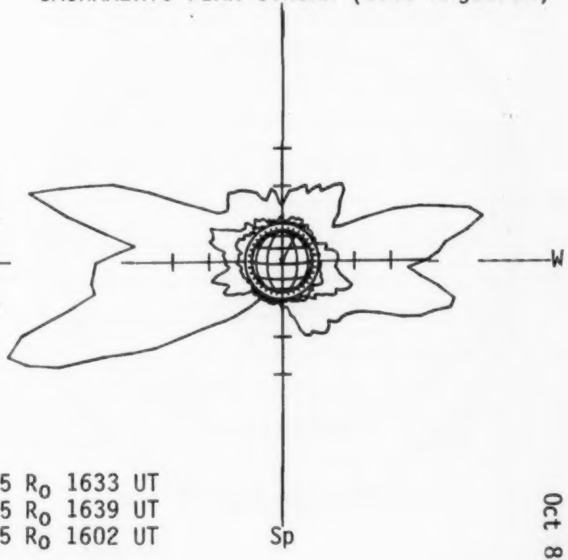
1611 UT

BOULDER SUNSPOTS


3959
3955
3954
3957
3950
Sp

1430 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

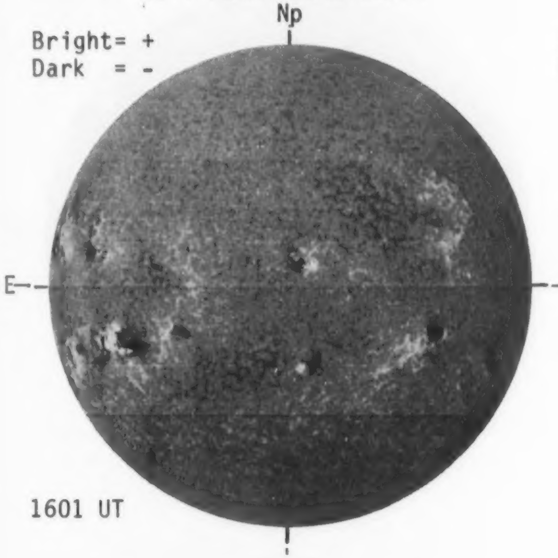


1.15 R_0 1633 UT
1.35 R_0 1639 UT
1.55 R_0 1602 UT

O C T O B E R 21, 1 9 8 2 (P= 25.92, B_0= 5.40, L_0= 108.28)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

Solid = +
Dashed= -

NO DATA

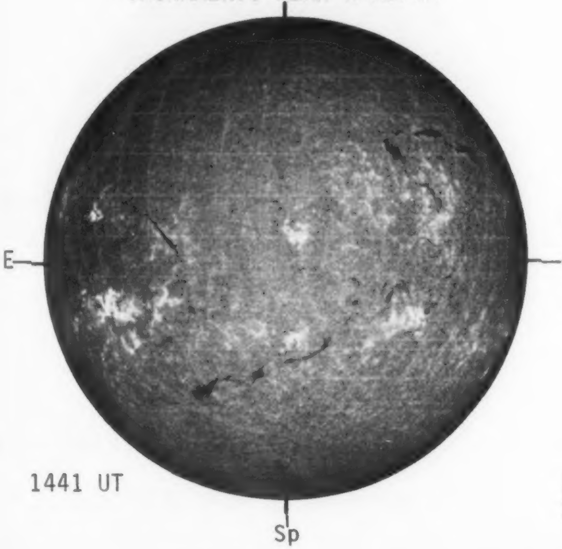
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

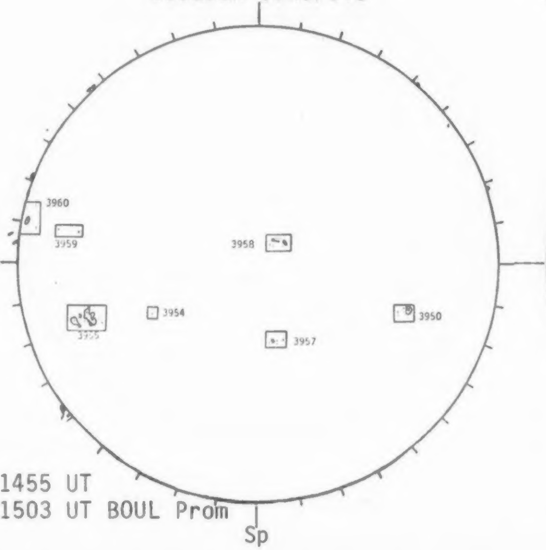
Delta Y=
Delta X=

NO DATA

SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS


3960
3959
3958
3955
3954
3957
3950
Sp

1455 UT
1503 UT BOUL Prom

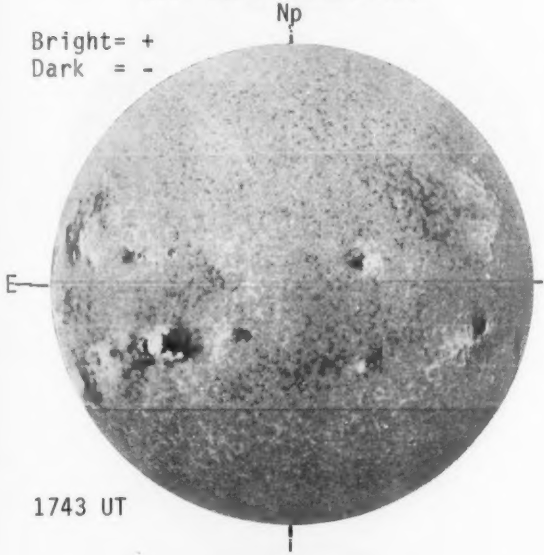
SACRAMENTO PEAK CORONA (5303 Angstrom)

NO DATA

O C T O B E R 22, 1 9 8 2 (P= 25.84, B_0= 5.32, L_0= 95.09)

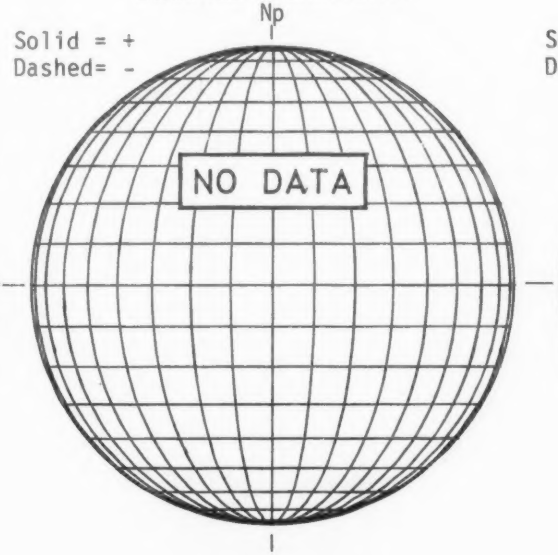
O C T O B E R 22, 1 9 8 2 (P= 25.84, B_o= 5.32, L_o= 95.09)

KITT PEAK MAGNETOGRAM

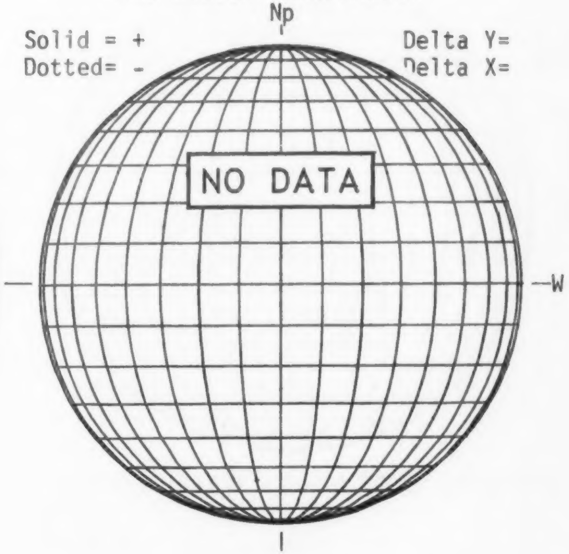

Np
Bright= +
Dark = -
E
Sp

1743 UT

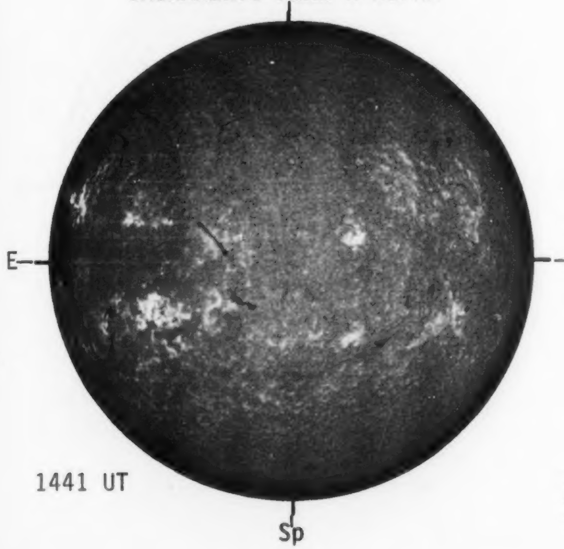
STANFORD MAGNETOGRAM


Np
Solid = +
Dashed= -
NO DATA

MT. WILSON MAGNETOGRAM

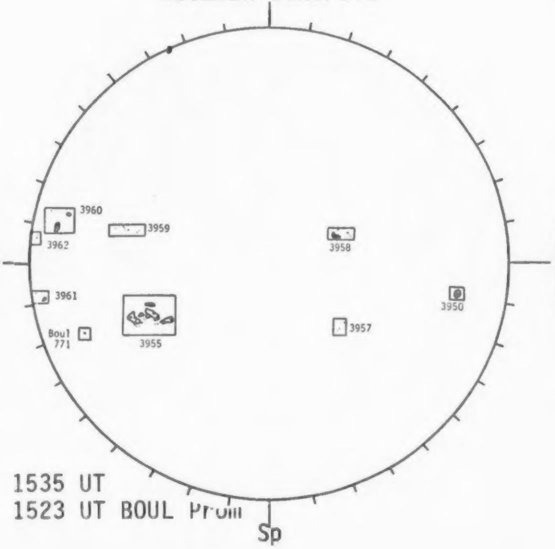

Np
Solid = +
Dotted= -
Delta Y=
Delta X=
NO DATA
W

SACRAMENTO PEAK H-ALPHA



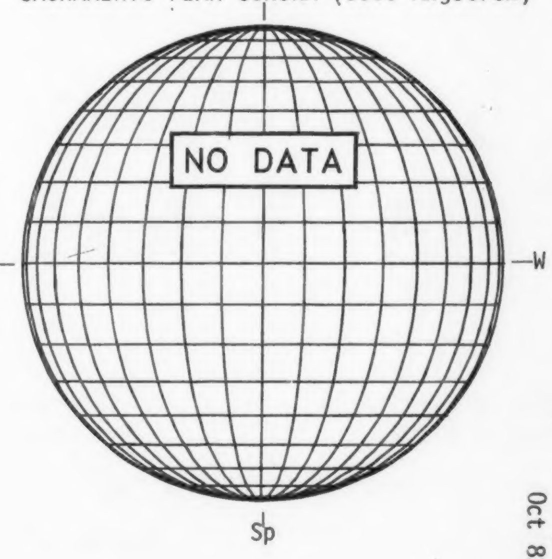
1441 UT

BOULDER SUNSPOTS


3960
3962
3959
3958
3961
3955
Boul 771
3957
3950
Sp

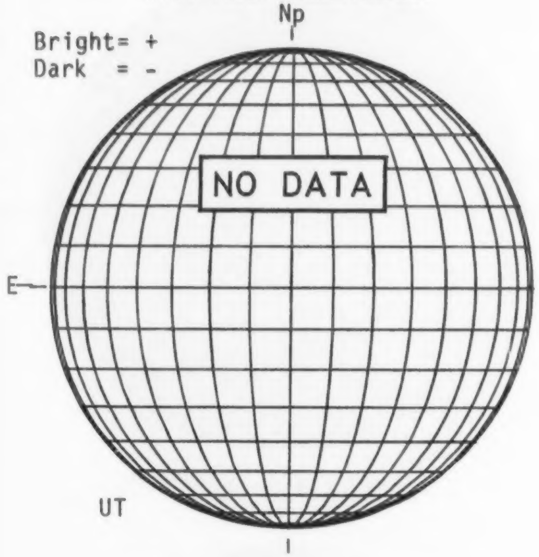
1535 UT
1523 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

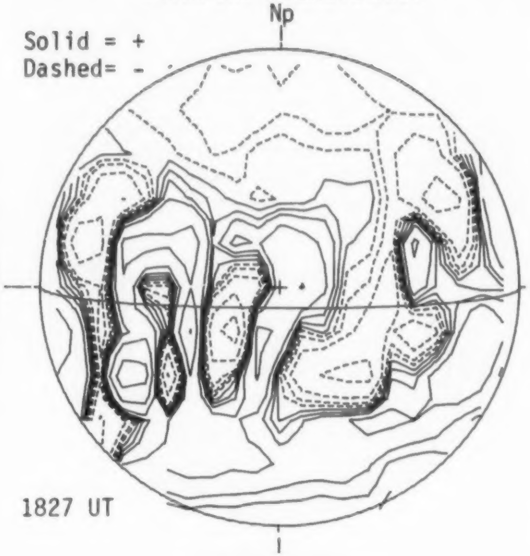


O C T O B E R 23, 1 9 8 2 (P= 25.75, B_o= 5.23, L_o= 81.90)

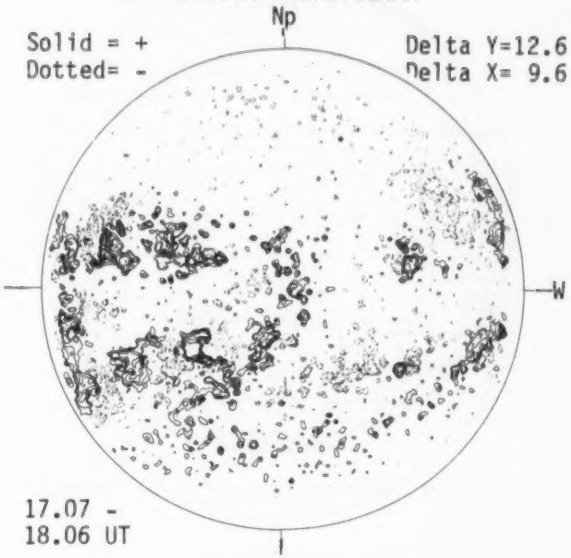
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
NO DATA
E
UT

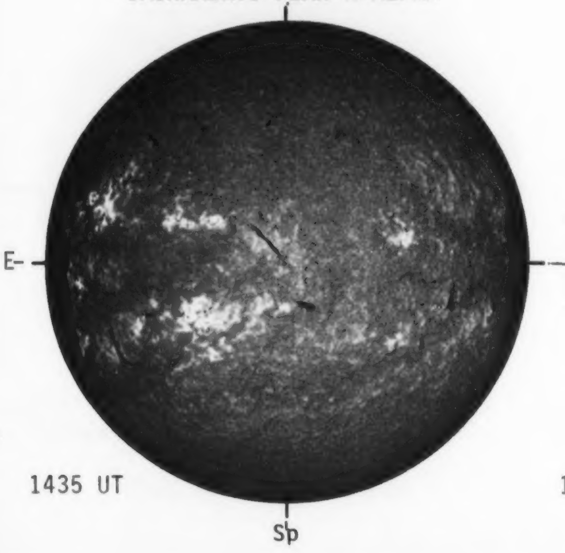
STANFORD MAGNETOGRAM



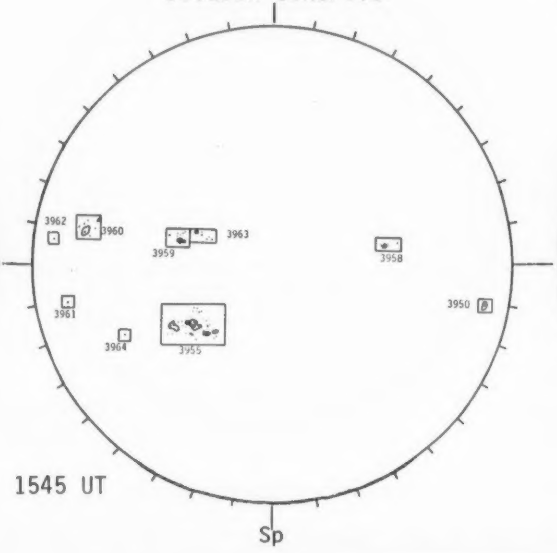
MT. WILSON MAGNETOGRAM



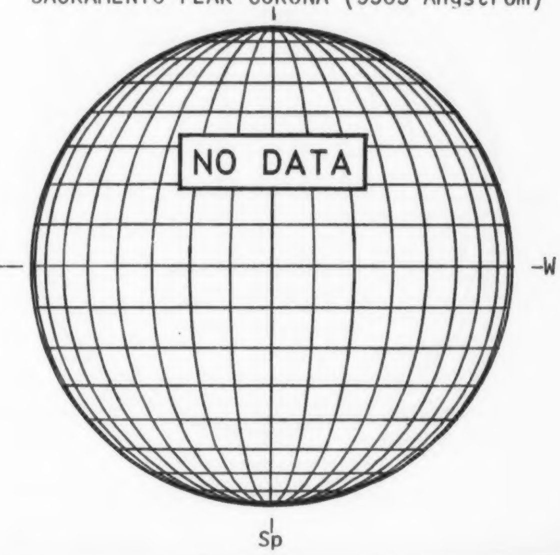
SACRAMENTO PEAK H-ALPHA



BOULDER SUNSPOTS


3962
3960
3959
3963
3958
3961
3964
3955
3950
1545 UT
Sp

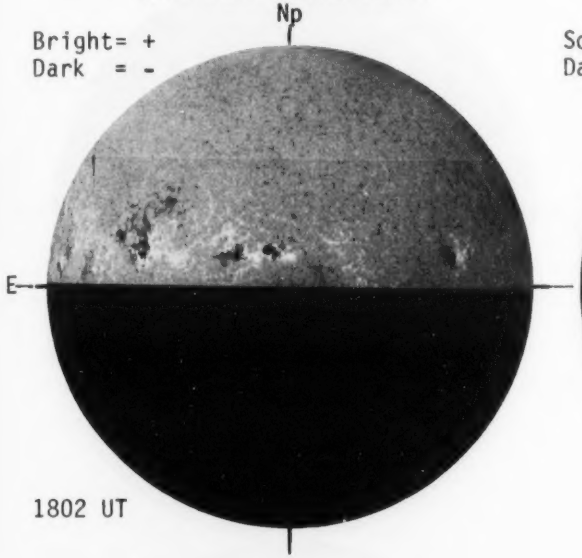
SACRAMENTO PEAK CORONA (5303 Angstrom)



O C T O B E R 24, 1 9 8 2 (P= 25.65, B_o= 5.14, L_o= 68.72)

O C T O B E R 24, 1 9 8 2 (P= 25.65, B_0= 5.14, L_0= 68.72)

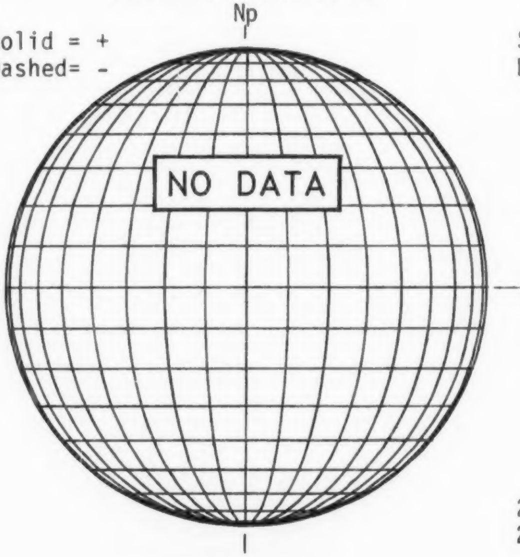
KITT PEAK MAGNETOGRAM



Bright= +
Dark = -

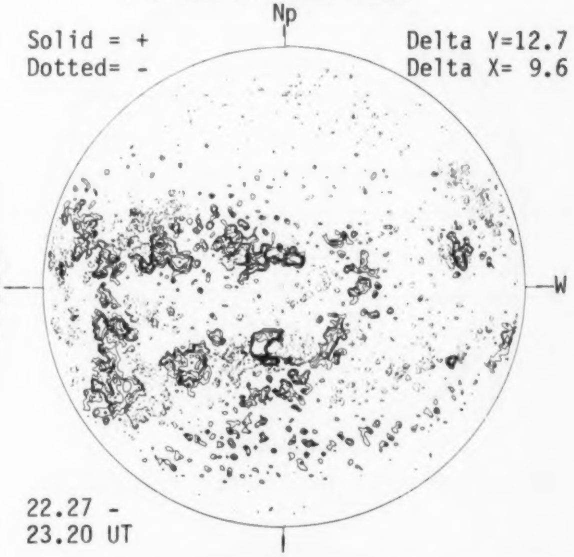
1802 UT

STANFORD MAGNETOGRAM



Solid = +
Dashed= -

MT. WILSON MAGNETOGRAM

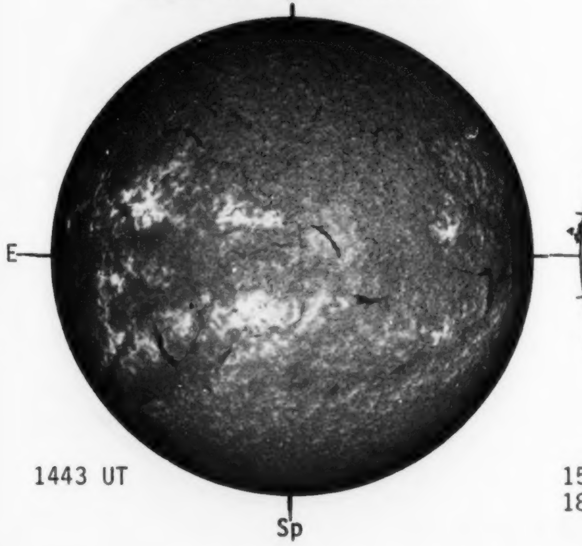


Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

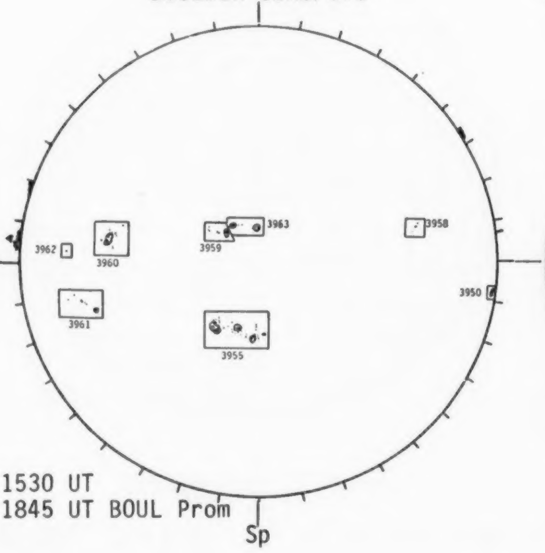
22.27 -
23.20 UT

SACRAMENTO PEAK H-ALPHA



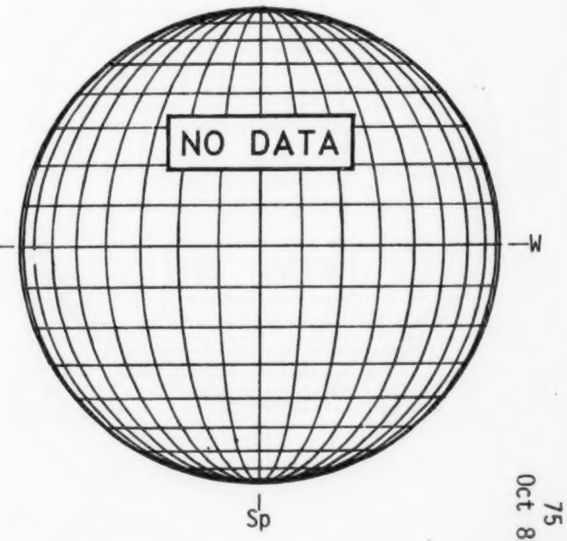
1443 UT

BOULDER SUNSPOTS


3962
3960
3959
3963
3958
3961
3955
3950
Sp

1530 UT
1845 UT BOUL Prom

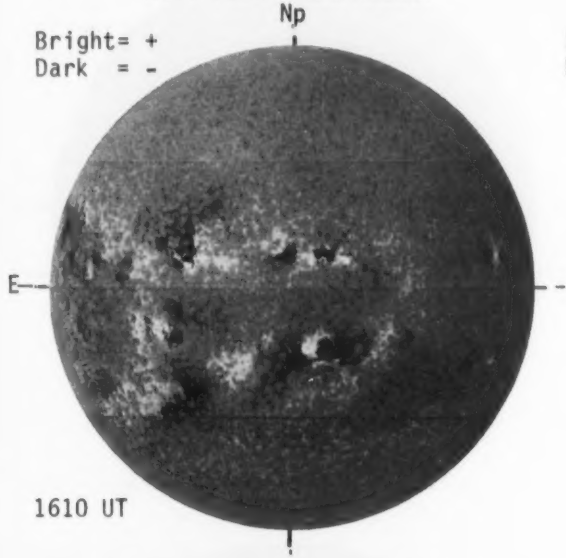
SACRAMENTO PEAK CORONA (5303 Angstrom)



O C T O B E R 25, 1 9 8 2 (P= 25.54, B_o= 5.05, L_o= 55.53)

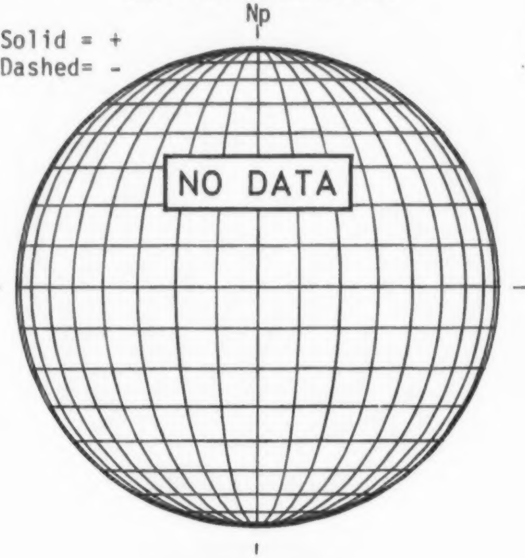
KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



STANFORD MAGNETOGRAM

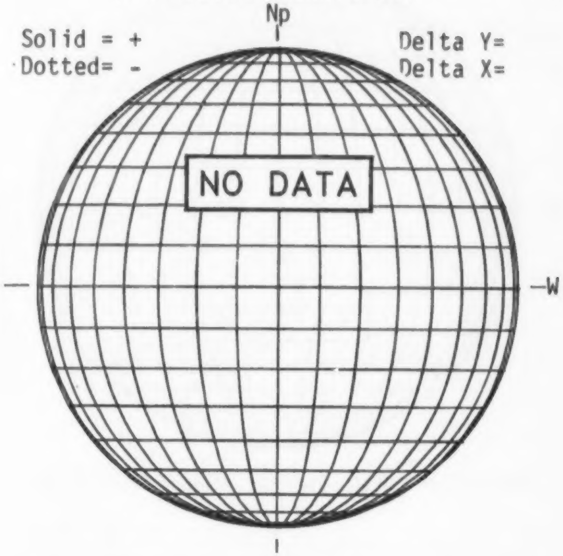
Solid = +
Dashed= -



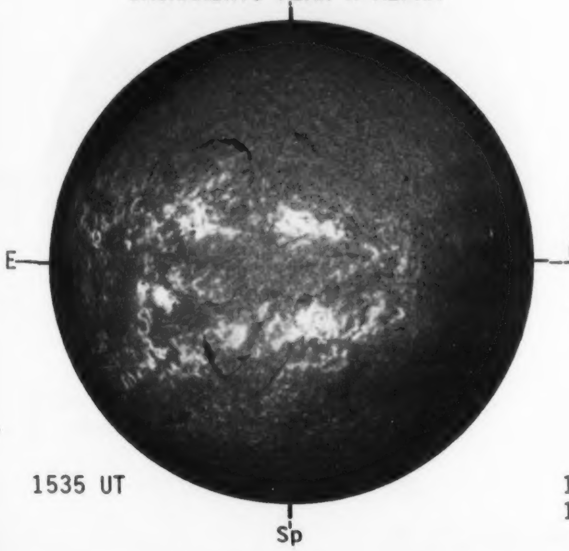
MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

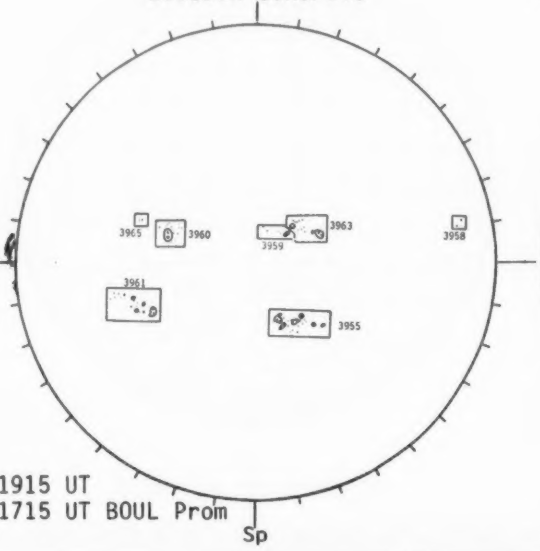
Delta Y=
Delta X=



SACRAMENTO PEAK H-ALPHA

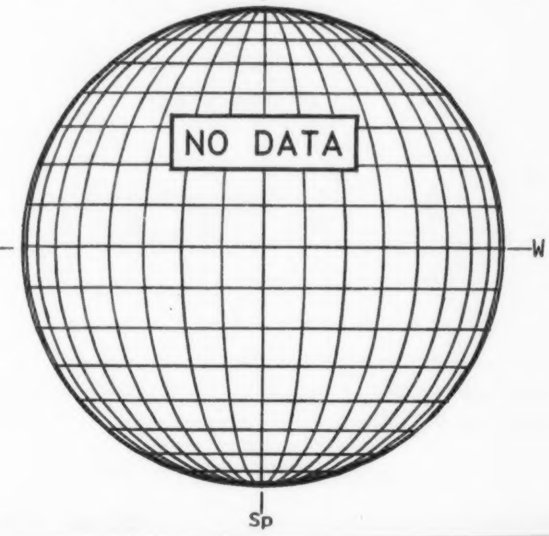


BOULDER SUNSPOTS


3965
3960
3959
3963
3958
3961
3955
Sp

1915 UT
1715 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)

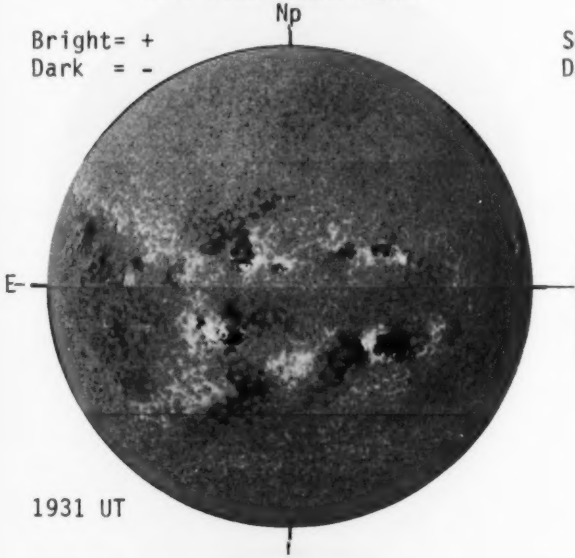


O C T O B E R 26, 1 9 8 2 (P= 25.43, B_o= 4.96, L_o= 42.34)

OCTOBER 26, 1982 (P= 25.43, B_0= 4.96, L_0= 42.34)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



1931 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

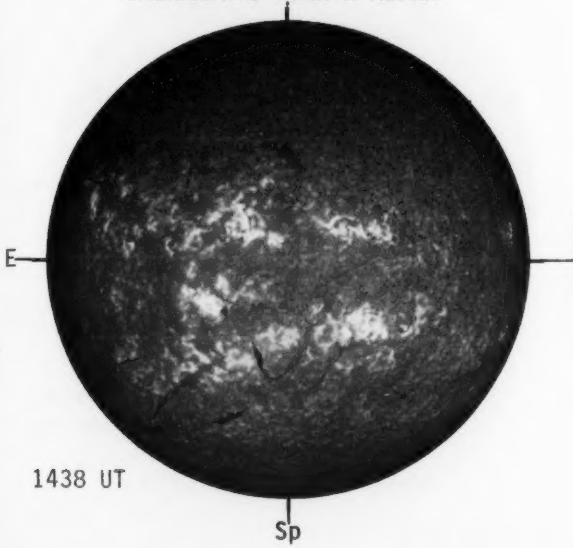
Delta Y=
Delta X=

Np

NO DATA

W

SACRAMENTO PEAK H-ALPHA



1438 UT

BOULDER SUNSPOTS

NO DATA

Sp

SACRAMENTO PEAK CORONA (5303 Angstrom)

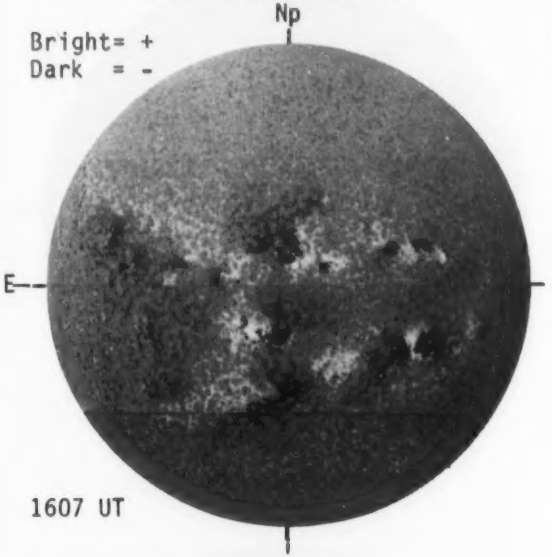
NO DATA

W

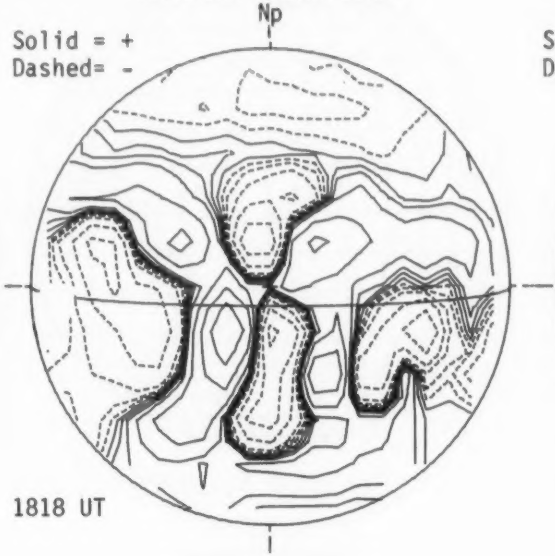
Sp

O C T O B E R 27, 1 9 8 2 (P=25.31, B_o= 4.87, L_o= 29.15)

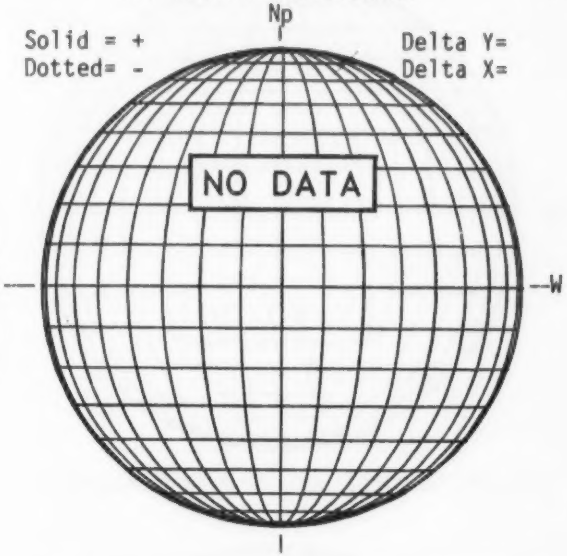
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
E
1607 UT

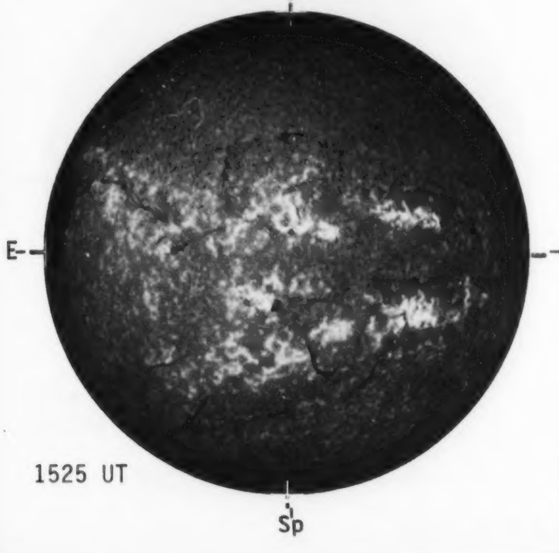
STANFORD MAGNETOGRAM



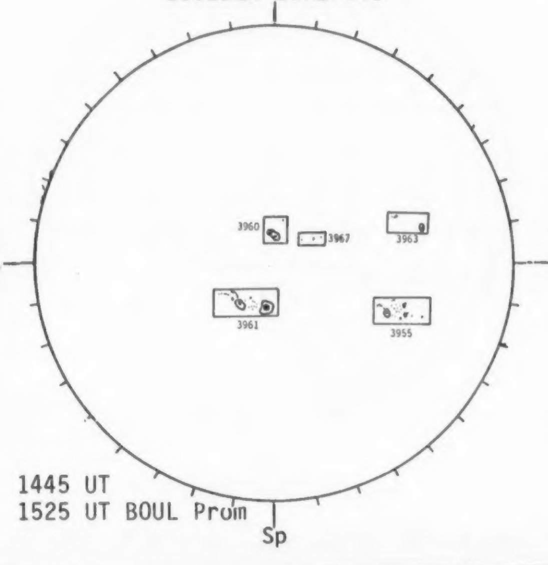
MT. WILSON MAGNETOGRAM


Np
Solid = +
Dotted= -
Delta Y=
Delta X=
NO DATA
W

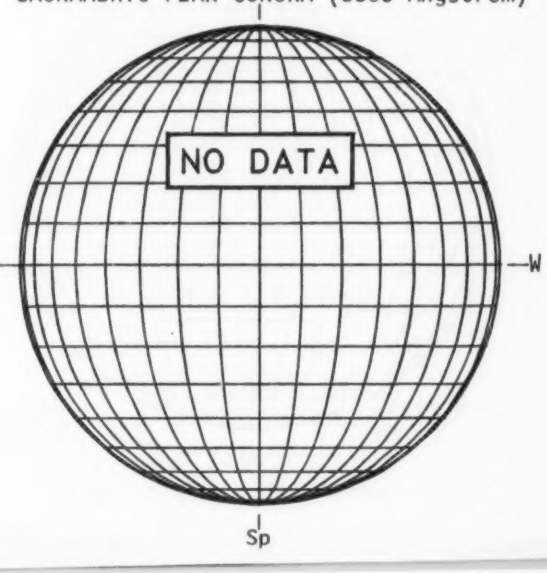
BOULDER H-ALPHA



BOULDER SUNSPOTS


3960
3967
3963
3961
3955
1445 UT
1525 UT BOUL Prom
Sp

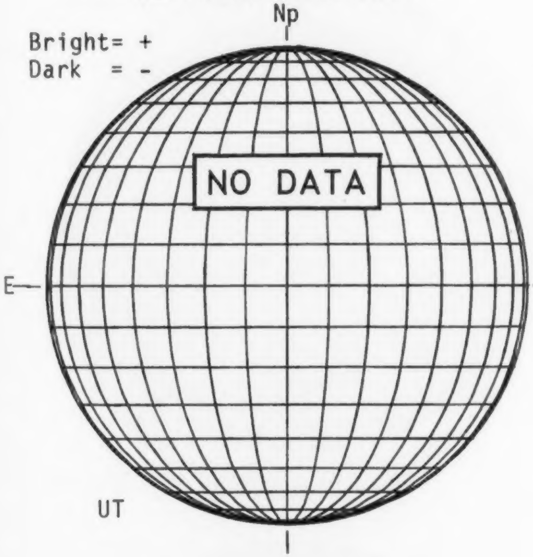
SACRAMENTO PEAK CORONA (5303 Angstrom)



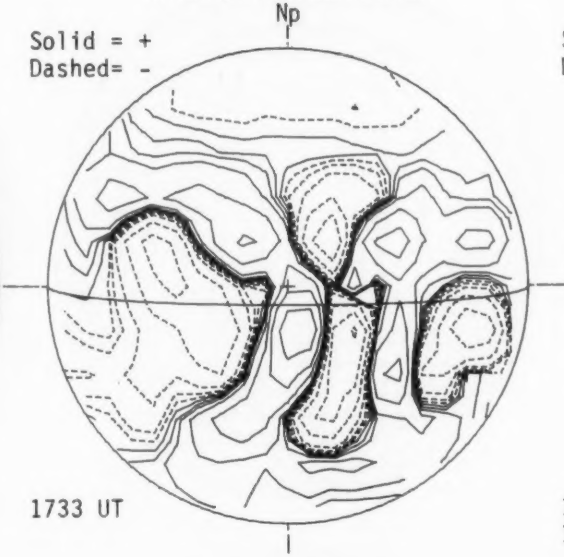
O C T O B E R 28, 1 9 8 2 (P= 25.18, B_o= 4.78, L_o= 15.96)

O C T O B E R 28, 1 9 8 2 (P= 25.18, B_0= 4.78, L_0= 15.96)

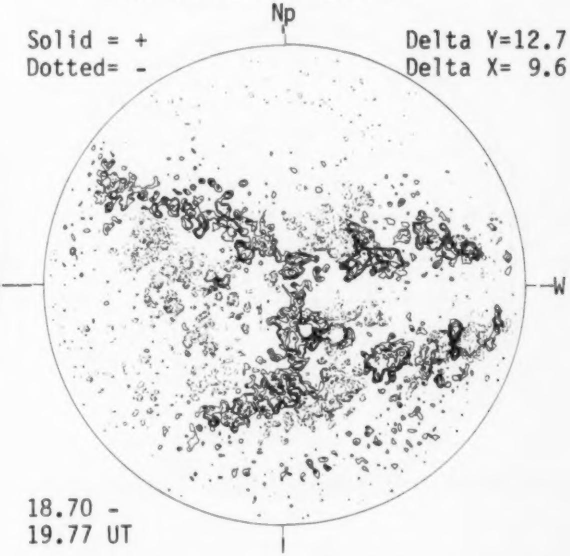
KITT PEAK MAGNETOGRAM


Np
Bright= +
Dark = -
NO DATA
E
UT

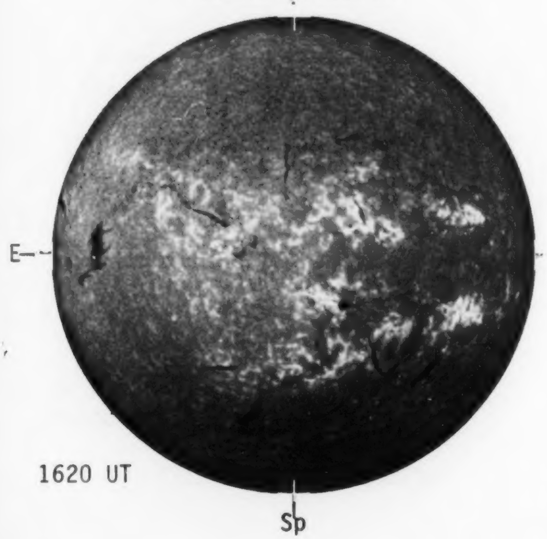
STANFORD MAGNETOGRAM



MT. WILSON MAGNETOGRAM

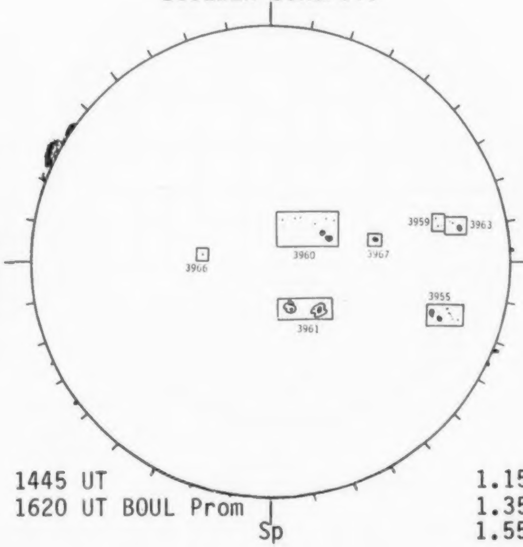


BOULDER H-ALPHA



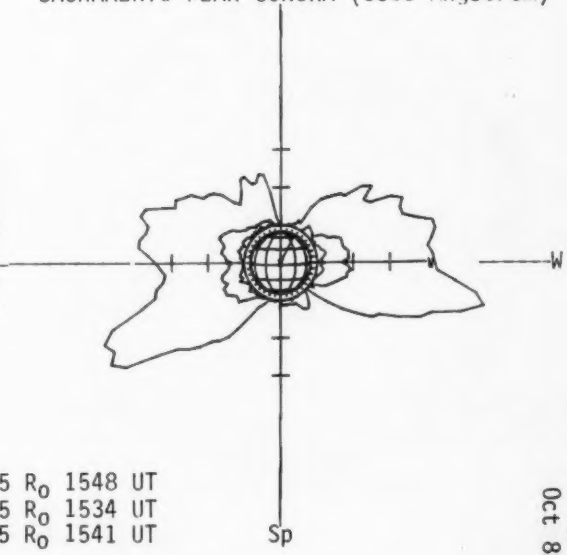
1620 UT

BOULDER SUNSPOTS


3966
3960
3967
3959
3963
3961
3955
Sp

1445 UT
1620 UT BOUL Prom

SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_0 1548 UT
1.35 R_0 1534 UT
1.55 R_0 1541 UT

O C T O B E R 29, 1 9 8 2 (P= 25.04, B_o= 4.68, L_o= 2.78)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -

NO DATA

STANFORD MAGNETOGRAM

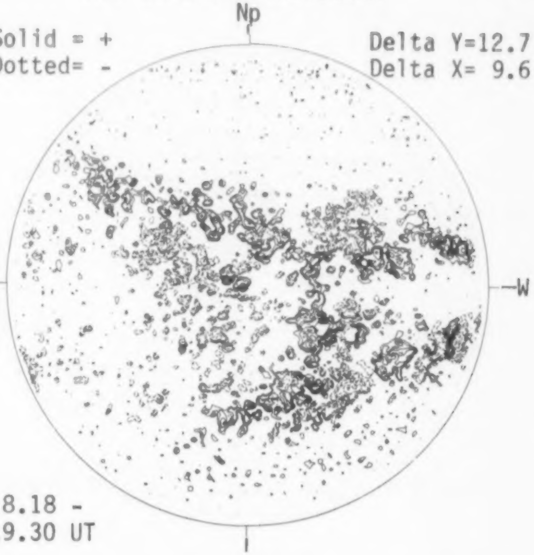
Solid = +
Dashed= -

NO DATA

MT. WILSON MAGNETOGRAM

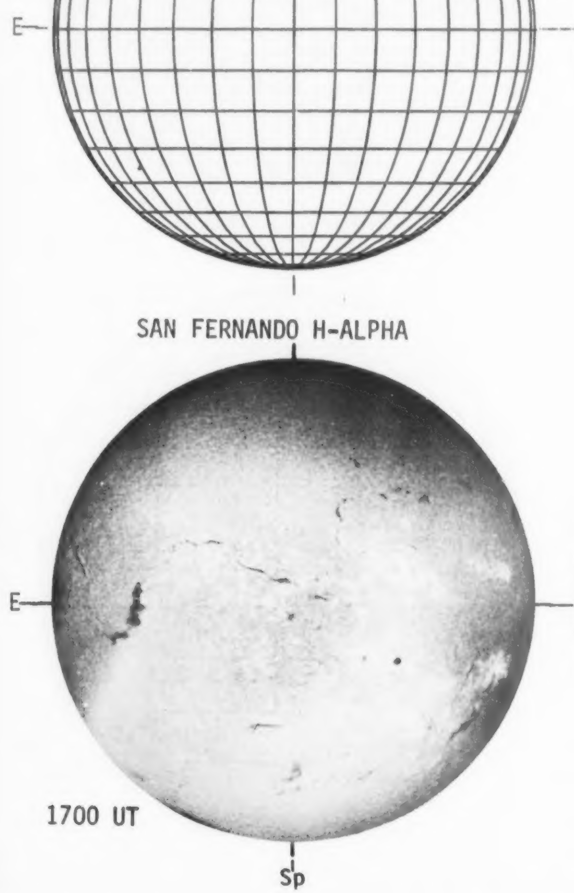
Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6



18.18 -
19.30 UT

SAN FERNANDO H-ALPHA

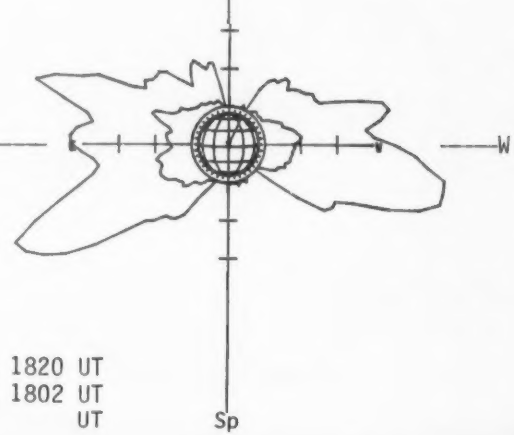


1700 UT

BOULDER SUNSPOTS

NO DATA

SACRAMENTO PEAK CORONA (5303 Angstrom)



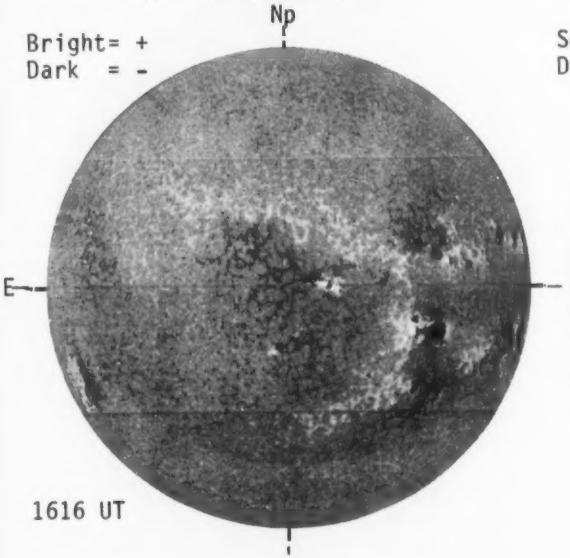
1.15 R_o 1820 UT
1.35 R_o 1802 UT
1.55 R_o UT

O C T O B E R 30, 1 9 8 2 (P= 24.90, B_o= 4.58, L_o= 349.59)

O C T O B E R 30, 1 9 8 2 (P= 24.90, B_0= 4.58, L_0= 349.59)

KITT PEAK MAGNETOGRAM

Bright= +
Dark = -



1616 UT

STANFORD MAGNETOGRAM

Solid = +
Dashed= -

Np

NO DATA

Sp

MT. WILSON MAGNETOGRAM

Solid = +
Dotted= -

Delta Y=
Delta X=

Np

NO DATA

W

Sp

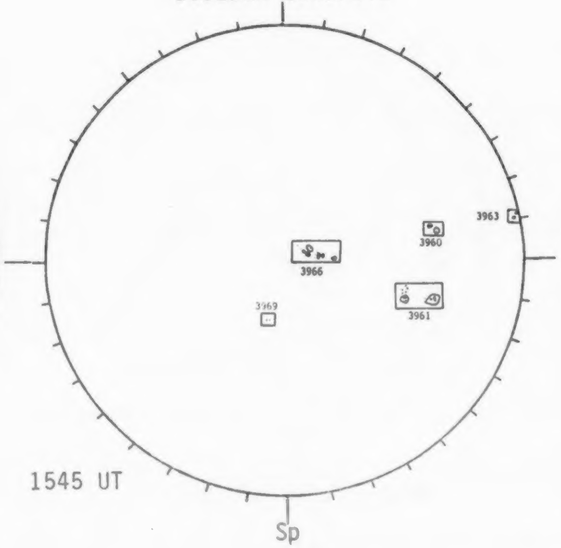
SACRAMENTO PEAK H-ALPHA

E

NO DATA

Sp

BOULDER SUNSPOTS



1545 UT

SACRAMENTO PEAK CORONA (5303 Angstrom)

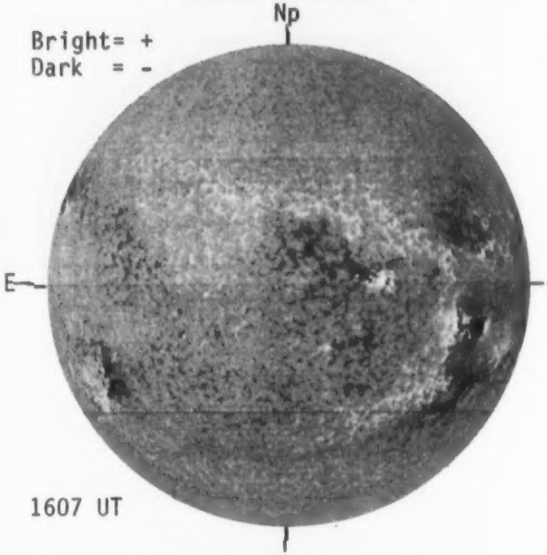
NO DATA

W

Sp

OCTOBER 31, 1982 (P= 24.75, B_0= 4.48, L_0= 336.40)

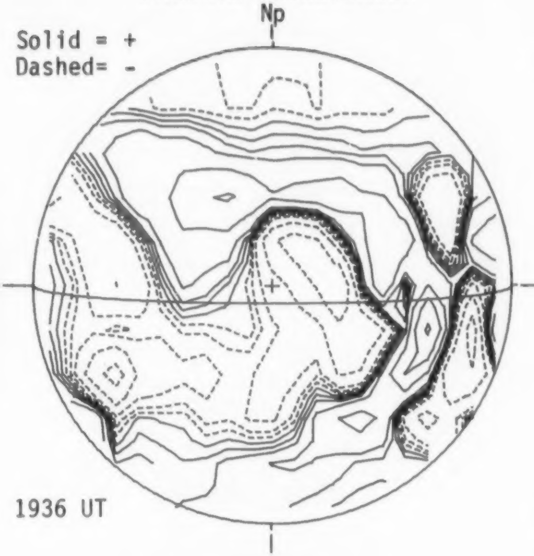
KITT PEAK MAGNETOGRAM



Bright= +
Dark = -

1607 UT

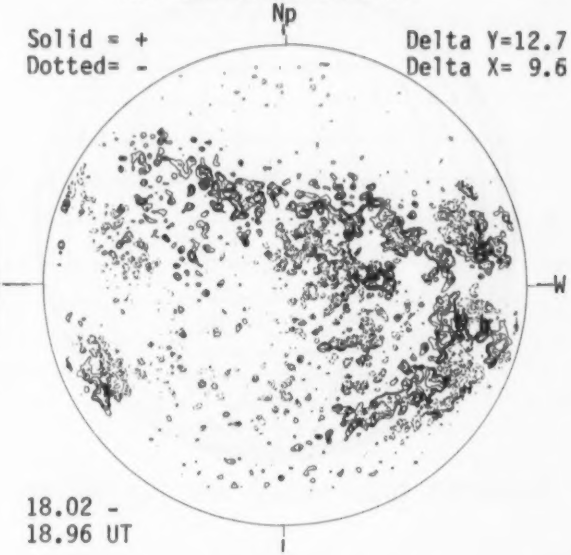
STANFORD MAGNETOGRAM



Solid = +
Dashed= -

1936 UT

MT. WILSON MAGNETOGRAM

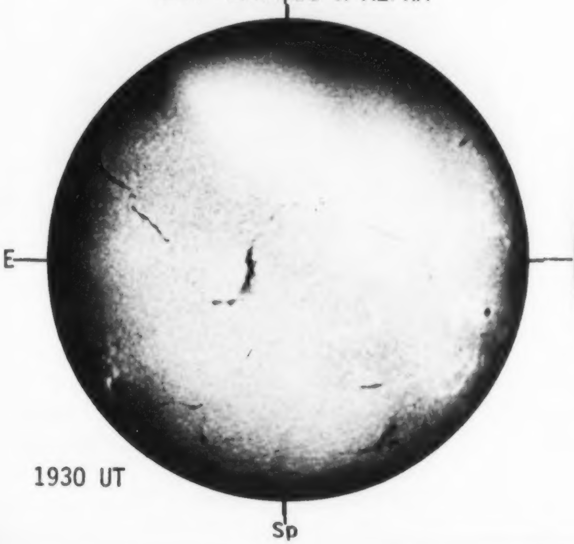


Solid = +
Dotted= -

Delta Y=12.7
Delta X= 9.6

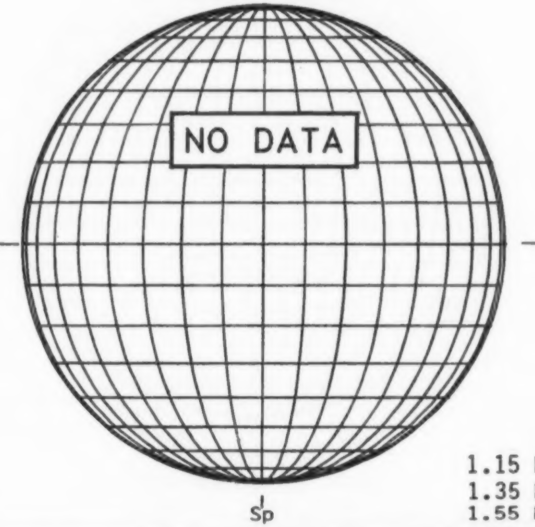
18.02 -
18.96 UT

SAN FERNANDO H-ALPHA

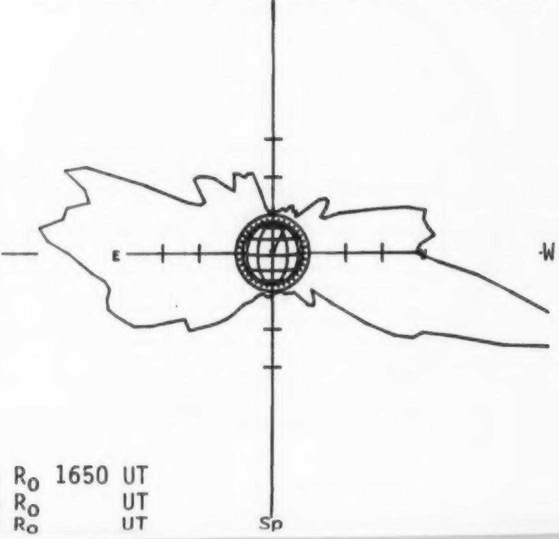


1930 UT

BOULDER SUNSPOTS



SACRAMENTO PEAK CORONA (5303 Angstrom)



1.15 R_0 1650 UT
1.35 R_0 UT
1.55 R_0 UT

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1982

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3923		HOLL	09	24	1520	S02	E85	10	1.0		A	HHX	130	2	4	3
3923		MANI	09	24	2312	S03	E82	10	1.1			HHX	700	1	3	2
3923		LEAR	09	25	0228	S03	E79	10	1.0		A	HKX	170	2	3	3
3923		RAMY	09	25	1319	S02	E75	10	1.2		B	DKO	260	8	10	1
3923		PALE	09	25	1950	S03	E71	10	1.1		B	CHO	250	6	9	3
3923		MANI	09	25	2353	S03	E66	09	30.9			DHO	430	9	10	2
3923		LEAR	09	26	0343	S03	E66	10	1.1		B	CKO	290	17	11	3
3923		RAMY	09	26	1335	S02	E62	10	1.2		B	EKO	550	15	13	2
3923		PALE	09	26	1808	S03	E60	10	1.2		B	EKO	240	18	11	3
3923		LEAR	09	27	0013	S03	E55	10	1.1		B	DKO	390	8	10	3
3923		RAMY	09	27	1345	S02	E55	10	1.7		B	CHO	260	9	9	3
3923		BOUL	09	27	1440	S01	E48	10	1.2		B	CHO	320	10	11	3
3923		HOLL	09	27	1506	S02	E48	10	1.2		B	DHO	340	4	9	2
3923	23355	MWIL	09	27	1730	S02	E46	10	1.2	5	(BP)					
3923		PALE	09	27	1800	S03	E47	10	1.3		B	DKO	230	9	10	3
3923		LEAR	09	28	0024	S03	E43	10	1.2		B	DHO	360	8	10	3
3923		LEAR	09	29	0108	S02	E28	10	1.1		B	DKO	400	10	9	3
3923		RAMY	09	29	1210	S03	E22	10	1.2		B	EKO	330	19		4
3923		BOUL	09	29	1538	S02	E19	10	1.1		B	DHO	300	13	8	3
3923		HOLL	09	29	1717	S02	E19	10	1.1		B	CHO	340	13	9	2
3923		PALE	09	29	1842	S03	E20	10	1.3		B	CKO	340	15	9	3
3923		LEAR	09	30	0421	S02	E12	10	1.1		B	CKO	340	13	9	3
3923		RAMY	09	30	1325	S02	E05	09	30.9		B	DKO	220	7	3	3
3923	23355	MWIL	09	30	1515	S01	E05	10	1.0	5	(BP)					
3923		PALE	09	30	1920	S03	E05	10	1.2		B	CKO	250	6	9	3
3923		LEAR	10	01	0227	S02	W00	10	1.1		B	CKO	260	19	9	3
3923		RAMY	10	01	1250	S01	W09	09	30.9		B	DHO	160	11	3	2
3923	23355	MWIL	10	01	1600	S01	W08	10	1.1	5	(BP)					
3923		HOLL	10	01	1710	S02	W11	09	30.9		B	DAO	220	7	4	4
3923		PALE	10	01	2000	S02	W12	09	30.9		B	DAO	160	4	3	2
3923		LEAR	10	02	0020	S03	W12	10	1.1		B	CAO	170	10	10	3
3923	23355	MWIL	10	02	1500	S02	W22	10	1.0	4	(BP)					
3923		RAMY	10	02	1503	S01	W22	10	1.0		B	DSO	90	8	4	2
3923		HOLL	10	02	1520	S01	W23	09	30.9		B	DAO	100	4	4	2
3923		PALE	10	02	1808	S01	W25	09	30.9		B	DAO	70	7	4	3
3923		MANI	10	02	2303	S03	W26	10	1.0			DAO	190	6	6	3
3923		LEAR	10	03	0040	S03	W26	10	1.1		B	CSO	90	14	8	3
3923		RAMY	10	03	1330	S02	W37	09	30.8		B	DSO	50	5	3	3
3923		BOUL	10	03	1435	S01	W37	09	30.8		B	CSO	30	9	5	3
3923		HOLL	10	03	1516	S02	W38	09	30.8		B	CSO	60	7	3	3
3923	23355	MWIL	10	03	1600	S01	W36	10	1.0	4	(AP)					
3923		PALE	10	03	1838	S01	W39	09	30.9		B	DSO	60	5	3	3
3923		MANI	10	03	2325	S02	W43	09	30.8			DSO	100	4	3	3
3923		LEAR	10	04	0015	S02	W42	09	30.9		B	CSO	30	8	5	3
3923		BOUL	10	04	1415	N01	W51	09	30.8		B	BXO	20	3	1	3
3923	23355	MWIL	10	04	1515	S00	W51	09	30.8	3	(AP)					
3923		HOLL	10	04	1752	N02	W53	09	30.8		A	HSX	30	1	2	3
3923		PALE	10	04	1824	N01	W54	09	30.7		A	HSX	20	1	1	3
3923		MANI	10	05	0001	S02	W55	09	30.9		B	CRO	30	3	4	3
3923		LEAR	10	05	0105	S01	W57	09	30.8		B	CSO	20	3	4	3
3923		RAMY	10	05	1430	S03	W64	09	30.8		B	CAO	50	3	4	4
3923		HOLL	10	05	1520	S02	W65	09	30.8		B	BXO	10	2	4	4
3923	23355	MWIL	10	05	1530	S00	W64	09	30.9	3	(AP)					
3923	23370	MWIL	10	05	1530	S03	W60	10	1.2	3	(AF)					
3930	23364	MWIL	10	01	1600	N13	W08	10	1.1	2	(B)					
3930		HOLL	10	01	1710	N12	W09	10	1.0		B	BXO	10	5	4	4
3930		PALE	10	01	2000	N12	W10	10	1.1		B	BXO	10	2	3	2
3930		LEAR	10	02	0020	N14	W13	10	1.0		B	BXO	10	8	5	3
3930	23364	MWIL	10	02	1500	N13	W22	10	1.0	4	(BY)					
3930		RAMY	10	02	1503	N13	W22	10	1.0		B	DAO	110	12	5	2
3930		HOLL	10	02	1520	N13	W22	10	1.0		B	BXO	50	13	7	2
3930		PALE	10	02	1808	N13	W23	10	1.0		B	DSO	50	11	6	3
3930		LEAR	10	03	0040	N13	W27	10	1.0		B	CSO	50	18	6	3
3930		RAMY	10	03	1330	N13	W35	09	30.9		B	CAO	50	7	6	3
3930		BOUL	10	03	1435	N14	W34	10	1.0		B	CAI	60	23	9	3
3930		HOLL	10	03	1516	N12	W35	10	1.0		B	CSO	90	14	7	3
3930	23364	MWIL	10	03	1600	N13	W34	10	1.1	4	(BF)					
3930		PALE	10	03	1838	N13	W35	10	1.1		B	CSO	70	8	5	3
3930		MANI	10	03	2325	N13	W38	10	1.1			CAO	80	8	5	3
3930		LEAR	10	04	0015	N13	W40	10	1.0		B	CRO	30	17	6	3

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(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3930		BOUL	10	04	1415	N12	W47	10	1.1		B	BXO	50	11	4	3
3930	23364	MWIL	10	04	1515	N13	W48	10	1.0	4	(D)					
3930		HOLL	10	04	1752	N13	W50	10	1.0		BD	DKI	190	12	9	3
3930		PALE	10	04	1824	N13	W49	10	1.1		B	DAO	120	11	5	3
3930		MANI	10	05	0001	N13	W51	10	1.1		B	DAO	120	10	5	3
3930		LEAR	10	05	0105	N13	W55	09	30.9		B	CAO	120	15	8	3
3930		RAMY	10	05	1430	N13	W60	10	1.1		BG	CKO	120	14	6	4
3930		BOUL	10	05	1450	N13	W62	09	30.9		BG	DAI	140	18	8	2
3930		HOLL	10	05	1520	N12	W61	10	1.0		BG	DAI	200	15	7	4
3930		PALE	10	05	1840	N13	W63	10	1.0		BG	CAO	140	12	5	3
3930		LEAR	10	06	0110	N13	W67	10	1.0		B	CSO	70	7	6	3
3930		HOLL	10	06	1445	N12	W76	09	30.9		B	DAO	110	8	9	2
3930		PALE	10	06	1905	N13	W77	10	1.0		B	DAO	100	4	3	2
3930		MANI	10	07	0019	N13	W80	10	1.0			DAI	220	3	5	2
3930		LEAR	10	07	0038	N14	W78	10	1.1		B	BXO	10	4	7	3
	23365	MWIL	10	02	1500	N08	W18	10	1.3	2	(AP)					
3934		RAMY	10	01	1250	S20	W02	10	1.4		B	BXO	20	4	2	2
3934		RAMY	10	02	1503	S20	W12	10	1.7		B	BXO	20	4	2	2
3934		HOLL	10	02	1520	S20	W13	10	1.6		A	AXX	10	2	2	2
3934		PALE	10	02	1808	S20	W15	10	1.6		A	AXX	10	2	1	3
3934		LEAR	10	03	0040	S20	W18	10	1.7		B	BXO		3	3	3
3934		RAMY	10	03	1330	S21	W25	10	1.6		A	AXX	20	4	2	3
3934		BOUL	10	03	1435	S19	W28	10	1.5		B	BXO	10	2	2	3
3934		HOLL	10	03	1516	S21	W27	10	1.6		A	AXX	10	2	2	3
3934	23368	MWIL	10	03	1600	S21	W26	10	1.7	3	(AF)					
3934		PALE	10	03	1838	S23	W31	10	1.4		A	AXX		1		3
3934		MANI	10	03	2325	S23	W34	10	1.4			AXX		1		3
3934		LEAR	10	04	0015	S20	W31	10	1.6		B	BXO		2	3	3
3934		BOUL	10	04	1415	S17	W44	10	1.2		B	BXO	10	2	2	3
3934	23368	MWIL	10	04	1515	S19	W40	10	1.6	2	(AF)					
3934		PALE	10	04	1824	S17	W47	10	1.2		A	AXX	10	2	1	3
3924		RAMY	09	25	1319	S18	E80	10	1.7		A	HKX	60	1	4	1
3924		PALE	09	25	1950	S19	E75	10	1.6		A	HKX	60	1	3	3
3924		MANI	09	25	2353	S19	E79	10	2.0			HSX	60	1	1	2
3924		LEAR	09	26	0343	S19	E69	10	1.4		A	HSX	60	2	2	3
3924		RAMY	09	26	1335	S18	E65	10	1.5		A	HAX	60	3	2	2
3924		PALE	09	26	1808	S19	E63	10	1.6		A	HSX	20	2	2	3
3924		LEAR	09	27	0013	S18	E58	10	1.4		A	HSX	40	2	2	3
3924		RAMY	09	27	1345	S19	E52	10	1.5		A	HAX	40	2	2	3
3924		BOUL	09	27	1440	S17	E49	10	1.3		A	HRX	20	4	2	3
3924		HOLL	09	27	1506	S18	E51	10	1.5		A	HSX	20	2	2	2
3924	23356	MWIL	09	27	1730	S19	E50	10	1.5	4	(AF)					
3924		PALE	09	27	1800	S19	E50	10	1.6		A	HAX	40	3	2	3
3924		LEAR	09	28	0024	S19	E45	10	1.5		A	HSX	20	3	1	3
3924	23356	MWIL	09	30	1515	S17	E12	10	1.5	3	(B)					
3926		LEAR	09	26	0343	N09	E79	10	2.1		A	AXX		1		3
3926		RAMY	09	26	1335	N12	E71	10	1.9		B	CRO	20	3	3	2
3926		PALE	09	26	1808	N09	E70	10	2.0		A	AXX		1		3
3926		LEAR	09	27	0013	N09	E66	10	2.0		A	AXX		2	2	3
3926		RAMY	09	27	1345	N10	E58	10	1.9		A	HRX	40	2	1	3
3926		BOUL	09	27	1440	N12	E57	10	1.9		A	AXX	10	2	2	3
3926		HOLL	09	27	1506	N10	E57	10	1.9		A	AXX	10	2	2	2
3926	23357	MWIL	09	27	1730	N09	E59	10	2.2	3	(AP)					
3926		PALE	09	27	1800	N09	E56	10	2.0		A	AXX	10	2	1	3
3926		LEAR	09	28	0024	N09	E52	10	1.9		A	AXX	10	2	1	3
		HOLL	10	01	1710	N24	E07	10	2.3		A	AXX		1		4
3931	23361	MWIL	09	30	1515	N17	E23	10	2.4	3	(AP)					
3931	23361	MWIL	10	01	1600	N16	E08	10	2.3	2	(AP)					
3931		HOLL	10	01	1710	N16	E08	10	2.3		B	BXO	10	2		4
3931		PALE	10	01	2000	N17	E05	10	2.2		B	BXO	10	2	1	2
3931		LEAR	10	02	0020	N17	E04	10	2.3		A	AXX	10	1	4	3
3931	23361	MWIL	10	02	1500	N16	W05	10	2.2	4	(B)					
3931		RAMY	10	02	1503	N18	W05	10	2.2		B	CSO	40	8	6	2
3931		HOLL	10	02	1520	N17	W05	10	2.3		B	BXO	20	6	5	2
3931		PALE	10	02	1808	N17	W07	10	2.2		B	CRO	20	7	5	3

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3931		MANI	10	02	2303	N16	W10	10	2.2			CRO	40	5	5	3
3931		LEAR	10	03	0040	N16	W10	10	2.3		B	BXO	10	9	5	3
3931		RAMY	10	03	1330	N16	W20	10	2.0		A	AXO	20	2	2	3
3931		BOUL	10	03	1435	N17	W20	10	2.1		B	BXO	10	3	1	3
3931		HOLL	10	03	1516	N16	W21	10	2.0		A	AXX	10	3	2	3
3931	23361	MWIL	10	03	1600	N16	W21	10	2.1	3	(AP)					
3931		PALE	10	03	1838	N17	W23	10	2.0		B	BXO	20	3	3	3
3931		MANI	10	03	2325	N16	W26	10	2.0			HRX	30	3	1	3
3931		LEAR	10	04	0015	N16	W27	10	2.0		A	AXX		5	1	3
3931		BOUL	10	04	1415	N16	W34	10	2.0		A	AXX	10	1	1	3
3931	23361	MWIL	10	04	1515	N17	W34	10	2.0	3	(AP)					
3931		HOLL	10	04	1752	N17	W37	10	1.9		A	AXX	10	1	1	3
3931		PALE	10	04	1824	N17	W37	10	2.0		A	AXX	10	1	1	3
3931		MANI	10	05	0001	N17	W39	10	2.0		A	AXX	10	1	1	3
3931		LEAR	10	05	0105	N16	W41	10	1.9		A	AXX		1		3
3931		RAMY	10	05	1430	N16	W48	10	2.0		A	HAX	20	1	1	4
3931		BOUL	10	05	1450	N18	W49	10	1.9		A	HRX	30	1	1	2
3931		HOLL	10	05	1520	N15	W49	10	1.9		A	AXX		1		4
3931	23361	MWIL	10	05	1530	N17	W48	10	2.0	4	(AP)					
3931		PALE	10	05	1840	N16	W50	10	2.0		A	AXX	10	1	1	3
3936		LEAR	10	05	0105	N09	W27	10	3.0		B	BXO	10	3	3	3
3936		RAMY	10	05	1430	N09	W33	10	3.1		B	DAO	50	2	4	4
3936		BOUL	10	05	1450	N11	W33	10	3.1		B	DRO	50	2	4	2
3936		HOLL	10	05	1520	N09	W35	10	3.0		B	CRO	40	7	5	4
3936	23371	MWIL	10	05	1530	N09	W35	10	3.0	3	(B)					
3936		PALE	10	05	1840	N09	W36	10	3.1		B	BXO	20	4	5	3
3936		LEAR	10	06	0110	N08	W40	10	3.0		B	CRO	30	4	4	3
3936		HOLL	10	06	1445	N08	W50	10	2.9		B	CAO	20	3	3	2
3936	23371	MWIL	10	06	1515	N08	W49	10	3.0	3	(BP)					
3936		PALE	10	06	1905	N08	W51	10	3.0		B	BXO	30	4	4	2
3936		LEAR	10	07	0038	N08	W55	10	2.9		B	BXO	20	3	3	3
3936		LEAR	10	08	0108	N08	W67	10	3.0		B	BXO	10	3	3	3
3936		MANI	10	08	0115	N07	W70	10	2.8			AXX	10	1		2
3936		RAMY	10	08	1430	N04	W80	10	2.6		B	BXO	60	2	10	4
3936	23371	MWIL	10	08	1445	N08	W77	10	2.8	3	(AP)					
3936		HOLL	10	08	1452	N07	W78	10	2.8		A	AXX	10	1	1	2
3936		PALE	10	08	1750	N07	W80	10	2.7		A	AXX	10	1	1	3
3936		MANI	10	09	0012	N07	W83	10	2.8			AXX	10	1		2
	23362	MWIL	09	30	1515	N18	E38	10	3.5	3	(AP)					
0001	23366	MWIL	10	02	1500	N09	E22	10	4.3	2	(AF)					
0001		HOLL	10	02	1520	N09	E21	10	4.2		A	AXX	10	2	1	2
0002		LEAR	10	01	0227	N16	E45	10	4.5		A	AXX	10	1		3
0002		LEAR	10	02	0020	N16	E33	10	4.5		A	AXX		1		3
0002	23372	MWIL	10	05	1530	N15	W15	10	4.5	2	(AF)					
3942		HOLL	10	09	1452	N15	W27	10	7.6		A	AXX	10	2	1	3
3942	23377	MWIL	10	09	1530	N15	W26	10	7.7	3	(B)					
3942		LEAR	10	10	0020	N15	W31	10	7.7		A	AXX	10	2	2	3
3942		MANI	10	10	0440	N17	W34	10	7.6			BXO	10	2	2	2
3939	23375	MWIL	10	07	1530	S12	E11	10	8.5	3	(B)					
3939		LEAR	10	08	0108	S12	E04	10	8.3		A	AXX		1		3
3937	23373	MWIL	10	06	1515	S21	E22	10	8.3	3	(AP)					
3937		PALE	10	06	1905	S21	E20	10	8.3		A	AXX	10	3	1	2
3937		MANI	10	07	0019	S22	E20	10	8.6			AXX	10	3	2	2
3937		LEAR	10	07	0038	S23	E18	10	8.4		B	BXO	20	4	6	3
3937	23382	MWIL	10	11	1545	S20	W42	10	8.4	3	(AP)					
3937		PALE	10	11	1812	S22	W45	10	8.3		A	AXX	10	1	1	3
3937		LEAR	10	12	0028	S21	W48	10	8.3		A	AXX		2	1	3
3937		RAMY	10	12	1315	S23	W60	10	7.9		B	BXO	20	3	1	3
3937	23382	MWIL	10	12	1500	S20	W56	10	8.3	3	(AP)					
3937		HOLL	10	12	1600	S21	W58	10	8.2		B	BXO	10	3	3	3
3937		PALE	10	12	1815	S21	W59	10	8.2		B	BXO	10	3	2	3
3937		LEAR	10	13	0140	S24	W63	10	8.2		A	AXX		1		3
3932	23367	MWIL	10	02	1500	S10	E79	10	8.6	3	(AP)					

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3932		RAMY	10	02	1503	S08	E81	10	8.7		A	HKX	60	1	5	2
3932		HOLL	10	02	1520	S09	E78	10	8.5		A	HHX	230	1	3	2
3932		PALE	10	02	1808	S10	E78	10	8.6		A	HHX	150	1	3	3
3932		MANI	10	02	2303	S09	E81	10	9.0			HSX	370	1	2	3
3932		LEAR	10	03	0040	S10	E76	10	8.7		A	HSX	220	1	2	3
3932		RAMY	10	03	1330	S10	E70	10	8.8		B	BAO	130	4	4	3
3932		BOUL	10	03	1435	S09	E68	10	8.7		B	HSO	10	2	1	3
3932		HOLL	10	03	1516	S09	E68	10	8.7		A	HSX	110	2	3	3
3932	23367	MWIL	10	03	1600	S10	E68	10	8.8	3	AP					
3932		PALE	10	03	1838	S10	E67	10	8.8		A	HSX	60	2	2	3
3932		MANI	10	03	2325	S09	E65	10	8.9			HSX	120	2	2	3
3932		LEAR	10	04	0015	S10	E63	10	8.7		A	HSX	80	4	2	3
3932		BOUL	10	04	1415	S11	E55	10	8.7		B	CSO	70	2	2	3
3932	23367	MWIL	10	04	1515	S10	E54	10	8.7	4	(AP)					
3932		HOLL	10	04	1752	S10	E54	10	8.8		A	HSX	200	2	3	3
3932		PALE	10	04	1824	S10	E53	10	8.8		A	HAX	60	2	2	3
3932		MANI	10	05	0001	S10	E51	10	8.8		A	HSX	150	2	2	3
3932		LEAR	10	05	0105	S11	E49	10	8.7		A	HAX	100	2	2	3
3932		RAMY	10	05	1430	S09	E43	10	8.8		B	DAO	150	5	4	4
3932		BOUL	10	05	1450	S09	E40	10	8.6		B	CSO	90	5	5	2
3932		HOLL	10	05	1520	S10	E42	10	8.8		B	DSO	90	3	4	4
3932	23367	MWIL	10	05	1530	S11	E41	10	8.7	5	(BF)					
3932		PALE	10	05	1840	S11	E40	10	8.8		B	DSO	90	3	3	3
3932		LEAR	10	06	0110	S11	E36	10	8.8		B	CSO	80	3	4	3
3932		HOLL	10	06	1445	S11	E28	10	8.7		B	CSO	110	4	3	2
3932	23367	MWIL	10	06	1515	S11	E28	10	8.7	5	(BF)					
3932		HOLL	10	06	1551	S12	E13	10	7.6		B	CSO	130	13	5	4
3932		PALE	10	06	1905	S11	E27	10	8.8		B	DSO	80	3	3	2
3932		MANI	10	07	0019	S10	E24	10	8.8			DSO	10	7	5	2
3932		LEAR	10	07	0038	S13	E22	10	8.7		B	CSO	100	5	5	3
3932		RAMY	10	07	1400	S12	E15	10	8.7		B	CKO	110	9	8	4
3932	23367	MWIL	10	07	1530	S11	E15	10	8.8	5	(AP)					
3932		PALE	10	07	1810	S12	E12	10	8.7		B	CSO	110	10	7	4
3932		LEAR	10	08	0108	S12	E10	10	8.8		A	HSX	120	9	4	3
3932		MANI	10	08	0115	S10	E10	10	8.8			CSO	100	8	5	2
3932		RAMY	10	08	1430	S12	E05	10	9.0		B	CKO	80	11	3	4
3932	23367	MWIL	10	08	1445	S12	E02	10	8.8	5	(BF)					
3932		HOLL	10	08	1452	S12	E03	10	8.8		B	CSO	110	8	5	2
3932		PALE	10	08	1750	S12	E01	10	8.8		B	CSO	70	10	4	3
3932		MANI	10	09	0012	S10	W03	10	8.8			CSO	100	8	4	2
3932		LEAR	10	09	0024	S12	W02	10	8.9		A	HSX	110	11	2	3
3932		HOLL	10	09	1452	S12	W10	10	8.9		B	CSO	60	2	4	3
3932	23367	MWIL	10	09	1530	S11	W11	10	8.8	4	(AP)					
3932		LEAR	10	10	0020	S12	W16	10	8.8		A	HSX	90	5	2	3
3932		MANI	10	10	0440	S10	W19	10	8.8			CSO	110	3	3	2
3932		HOLL	10	10	1430	S10	W22	10	8.9		A	HSX	50	1	1	3
3932		BOUL	10	10	1445	S10	W23	10	8.9		A	HSX	20	1	2	1
3932		RAMY	10	10	1500	S12	W23	10	8.9		B	CKO	90	4	5	4
3932	23367	MWIL	10	10	1630	S10	W24	10	8.9	5	(AP)					
3932		PALE	10	10	1823	S10	W25	10	8.9		A	HSX	40	1	1	3
3932		MANI	10	10	2255	S10	W28	10	8.8			HSX	90	1	2	3
3932		LEAR	10	11	0025	S11	W29	10	8.8		B	CSO		2	3	3
3932		BOUL	10	11	1505	S09	W36	10	8.9		A	HSX	60	1	2	2
3932		HOLL	10	11	1535	S11	W37	10	8.9		A	HSX	70	1	2	3
3932	23367	MWIL	10	11	1545	S10	W36	10	8.9	5	(AP)					
3932		PALE	10	11	1812	S10	W38	10	8.9		A	HSX	50	1	1	3
3932		MANI	10	11	2250	S10	W41	10	8.9			HSX	100	1	2	3
3932		LEAR	10	12	0028	S10	W41	10	8.9		A	HSX	50	1	1	3
3932		RAMY	10	12	1315	S12	W51	10	8.7		A	HAX	70	1	2	3
3932	23367	MWIL	10	12	1500	S10	W49	10	8.9	4	(AP)					
3932		HOLL	10	12	1600	S11	W49	10	9.0		A	HSX	70	1	2	3
3932		PALE	10	12	1815	S11	W51	10	8.9		A	HSX	40	1	2	3
3932		LEAR	10	13	0140	S11	W56	10	8.9		A	HSX	60	1	1	3
3932		RAMY	10	13	1435	S12	W61	10	9.0		A	HSX	50	1	1	3
3932		BOUL	10	13	1508	S10	W63	10	8.9		A	HSX	50	1	1	2
3932	23367	MWIL	10	13	1515	S10	W62	10	9.0	4	(AP)					
3932		HOLL	10	13	1805	S11	W64	10	8.9		A	HSX	60	1	2	3
3932		PALE	10	13	1810	S11	W65	10	8.9		A	HSX	60	1	1	3
3932		MANI	10	14	0104	S10	W69	10	8.9			HSX	110	1	2	2
3932		LEAR	10	14	0110	S11	W68	10	8.9		A	HSX	30	1	1	3
3932		RAMY	10	14	1410	S11	W74	10	9.0		A	HSX	60	1	1	3

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation					CMP		Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
			Mo	Day	Time (UT)	Lat	CMD	Mo	Day							
3932		HOLL	10	14	1514	S12	W78	10	8.8		A	HSX	10	1	2	4
3932	23367	MWIL	10	14	1530	S11	W75	10	9.0	4	(AP)					
3932		PALE	10	14	1750	S11	W78	10	8.9		A	AXX	10	1	1	3
3932		LEAR	10	15	0105	S12	W85	10	8.6		A	HSX		1	1	3
3940	23376	MWIL	10	08	1445	N15	E22	10	10.3	3	(B)					
3940		HOLL	10	08	1452	N15	E23	10	10.4		B	BXO	10	2	3	2
3940		PALE	10	08	1750	N15	E23	10	10.5		B	BXO	20	3	4	3
3940		MANI	10	09	0012	N14	E19	10	10.4			DRO	30	6	4	2
3940		LEAR	10	09	0024	N15	E17	10	10.3		B	DSO	30	4	4	3
3940		HOLL	10	09	1452	N15	E09	10	10.3		B	BXO	30	7	5	3
3940	23376	MWIL	10	09	1530	N15	E09	10	10.3	4	(B)					
3940		LEAR	10	10	0020	N13	W03	10	9.8		A	AXX		1		3
3940		LEAR	10	10	0020	N15	E04	10	10.3		B	DSO	40	10	5	3
3940		MANI	10	10	0440	N14	W02	10	10.0			CRO	40	19	8	2
3940		HOLL	10	10	1430	N15	W07	10	10.1		B	DSO	50	11	9	3
3940		BOUL	10	10	1445	N15	W08	10	10.0		B	DRO	30	8	9	1
3940		RAMY	10	10	1500	N15	W07	10	10.1		B	DAO	30	10	9	4
3940	23376	MWIL	10	10	1630	N15	W06	10	10.2	3	(BY)					
3940		PALE	10	10	1823	N15	W07	10	10.2		B	CRO	30	9	9	3
3940		MANI	10	10	2255	N14	W10	10	10.2			BXO	20	4	10	3
3940		LEAR	10	11	0025	N15	W11	10	10.2		B	BXO	10	7	8	3
3940		HOLL	10	11	1535	N12	W24	10	9.8		A	AXX		1		3
3940	23376	MWIL	10	11	1545	N13	W24	10	9.8	2	(AP)					
3940		PALE	10	11	1812	N12	W11	10	10.9		B	BXO	30	7	5	3
3940		PALE	10	11	1812	N13	W25	10	9.9		B	BXO	10	2	3	3
3940		LEAR	10	12	0028	N13	W06	10	11.6		B	BXO	10	3	3	3
3935	23369	MWIL	10	04	1515	N07	E76	10	10.3	3	(AP)					
3935		HOLL	10	04	1752	N07	E77	10	10.5		A	AXX	10	2	1	3
3935		PALE	10	04	1824	N07	E77	10	10.5		A	AXX	10	2	2	3
3935		MANI	10	05	0001	N07	E74	10	10.5		A	AXX		1		3
3935		LEAR	10	05	0105	N07	E72	10	10.4		B	BXO	10	2	4	3
3935		RAMY	10	05	1430	N08	E65	10	10.5		B	CRO	50	3	3	4
3935		BOUL	10	05	1450	N08	E64	10	10.4		B	CSO	120	3	7	2
3935		HOLL	10	05	1520	N08	E65	10	10.5		B	BXO	20	7	5	4
3935	23369	MWIL	10	05	1530	N07	E61	10	10.2	4	(AP)					
3935		PALE	10	05	1840	N06	E63	10	10.5		B	BXO	20	3	3	3
3935		LEAR	10	06	0110	N07	E60	10	10.5		B	BXO	10	5	7	3
3935		HOLL	10	06	1445	N08	E52	10	10.5		B	CRO	80	10	9	2
3935	23369	MWIL	10	06	1515	N08	E51	10	10.5	4	(B)					
3935		HOLL	10	06	1551	N08	E38	10	9.5		B	BXO	50	7	9	4
3935		PALE	10	06	1905	N08	E50	10	10.5		B	CRO	90	12	9	2
3935		MANI	10	07	0019	N07	E47	10	10.5			BXO	50	11	7	2
3935		LEAR	10	07	0038	N07	E46	10	10.5		B	BXO	80	14	9	3
3935		RAMY	10	07	1400	N09	E40	10	10.6		B	BXO	30	6	10	4
3935	23369	MWIL	10	07	1530	N07	E38	10	10.5	3	(B)					
3935		PALE	10	07	1810	N08	E39	10	10.7		B	BXO	40	8	8	4
3935		LEAR	10	08	0108	N07	E35	10	10.7		B	BXO	20	5	6	3
3935		MANI	10	08	0115	N07	E34	10	10.6			BXO	20	4	8	2
3935		RAMY	10	08	1430	N09	E27	10	10.6		B	BXO	20	4	10	4
3935	23369	MWIL	10	08	1445	N08	E27	10	10.6	3	(B)					
3935		HOLL	10	08	1452	N08	E26	10	10.6		B	BXO	20	5	10	2
3935		PALE	10	08	1750	N07	E25	10	10.6		B	BXO	20	4	7	3
3935		MANI	10	09	0012	N07	E21	10	10.6			BXO	10	2	8	2
3935		LEAR	10	09	0024	N07	E22	10	10.7		B	BXO	10	5	6	3
3935		HOLL	10	09	1452	N08	E09	10	10.3		A	AXX		1		3
3935	23369	MWIL	10	09	1530	N08	E08	10	10.2	3	(AF)					
3935		LEAR	10	10	0020	N08	E03	10	10.2		A	AXX	10	4	2	3
3935		MANI	10	10	0440	N07	E04	10	10.5			BXO	20	8	8	2
3935		HOLL	10	10	1430	N07	W00	10	10.6		B	BXO	10	3	5	3
3935		BOUL	10	10	1445	N07	W01	10	10.5		B	BXO	10	5	4	1
3935		RAMY	10	10	1500	N08	W00	10	10.6		B	BXO	10	3	5	4
3935	23369	MWIL	10	10	1630	N07	W01	10	10.6	2	(B)					
3935		PALE	10	10	1823	N07	W02	10	10.6		B	BXO	10	3	4	3
3935		MANI	10	10	2255	N07	W05	10	10.6			BXO	10	4	4	3
3935		LEAR	10	11	0025	N08	W05	10	10.6		B	BXO	10	3	4	3
3938		PALE	10	05	1840	N21	E63	10	10.6		A	AXX	10	1	1	3
3938	23374	MWIL	10	06	1515	N22	E50	10	10.5	3	(AP)					
3938		HOLL	10	06	1551	N22	E41	10	9.8		B	DSO	90	12	8	4

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3938		MANI	10	07	0019	N21	E50	10	10.8			BXO	20	5	2	2
3938		LEAR	10	07	0038	N22	E44	10	10.4		A	AXX	10	1		3
3938		RAMY	10	07	1400	N24	E42	10	10.8		B	BXO	30	7	4	4
3938	23374	MWIL	10	07	1530	N21	E41	10	10.8	3	(B)					
3938		PALE	10	07	1810	N21	E40	10	10.8		B	DSO	70	13	7	4
3938		LEAR	10	08	0108	N22	E35	10	10.7		B	DAO	90	10	6	3
3938		MANI	10	08	0115	N20	E35	10	10.7			DSO	50	8	7	2
3938		RAMY	10	08	1430	N24	E28	10	10.8		B	CAO	70	12	9	4
3938	23374	MWIL	10	08	1445	N22	E28	10	10.8	5	(B)					
3938		HOLL	10	08	1452	N22	E28	10	10.8		B	DSI	70	11	9	2
3938		PALE	10	08	1750	N22	E27	10	10.8		B	DSI	100	16	8	3
3938		MANI	10	09	0012	N21	E22	10	10.7			DSO	140	15	8	2
3938		LEAR	10	09	0024	N22	E24	10	10.9		B	DSO	150	18	8	3
3938		HOLL	10	09	1452	N22	E14	10	10.7		B	DSI	120	19	9	3
3938	23374	MWIL	10	09	1530	N22	E14	10	10.7	4	(B)					
3938		LEAR	10	10	0020	N22	E09	10	10.7		B	DSI	180	26	10	3
3938		MANI	10	10	0440	N22	E07	10	10.7			DSO	140	29	10	2
3938		HOLL	10	10	1430	N23	W00	10	10.6		B	DAI	150	35	10	3
3938		BOUL	10	10	1445	N21	W02	10	10.5		B	DAI	120	21	10	1
3938		RAMY	10	10	1500	N23	E00	10	10.6		B	EKO	220	30	11	4
3938	23374	MWIL	10	10	1630	N22	W00	10	10.7	4	(B)					
3938		PALE	10	10	1823	N23	W01	10	10.7		B	EAI	170	34	11	3
3938		MANI	10	10	2255	N22	W03	10	10.7			ESI	180	33	11	2
3938		LEAR	10	11	0025	N23	W05	10	10.6		B	EAI	210	34	11	3
3938		BOUL	10	11	1505	N23	W14	10	10.5		BG	EKI	200	32	11	2
3938		HOLL	10	11	1535	N24	W13	10	10.6		BG	ESO	240	36	13	3
3938	23374	MWIL	10	11	1545	N22	W13	10	10.7	5	(B)					
3938		PALE	10	11	1812	N23	W15	10	10.6		BG	EAI	240	37	12	3
3938		MANI	10	11	2250	N23	W16	10	10.7			ESI	280	26	12	3
3938		LEAR	10	12	0028	N22	W18	10	10.6		B	ESI	230	27	11	3
3938		RAMY	10	12	1315	N23	W27	10	10.5		BG	EKI	160	21	14	3
3938	23374	MWIL	10	12	1500	N22	W26	10	10.6	5	(B)					
3938		HOLL	10	12	1600	N23	W28	10	10.5		B	EAI	260	35	13	3
3938		PALE	10	12	1815	N22	W28	10	10.6		BG	EAI	300	30	12	3
3938		LEAR	10	13	0140	N22	W31	10	10.7		B	ESI	300	28	12	3
3938		RAMY	10	13	1435	N21	W40	10	10.5		B	EAO	230	17	13	3
3938		BOUL	10	13	1508	N23	W39	10	10.6		B	ESO	160	22	11	2
3938	23374	MWIL	10	13	1515	N22	W40	10	10.6	5	(B)					
3938		HOLL	10	13	1805	N22	W40	10	10.7		B	FSO	200	24	16	3
3938		PALE	10	13	1810	N22	W42	10	10.5		B	ESO	240	25	12	3
3938		MANI	10	14	0104	N23	W46	10	10.5			ESO	260	24	12	2
3938		LEAR	10	14	0110	N22	W45	10	10.6		B	ESO	230	23	12	3
3938		HOLL	10	14	1514	N22	W52	10	10.6		B	CSO	170	22	12	4
3938	23374	MWIL	10	14	1530	N22	W52	10	10.6	5	(B)					
3938		PALE	10	14	1750	N23	W54	10	10.6		B	ESO	180	12	13	3
3938		BOUL	10	14	1925	N24	W57	10	10.4		B	ESO	200	12	13	3
3938		LEAR	10	15	0105	N23	W58	10	10.6		B	ESO	180	14	13	3
3938		RAMY	10	15	1255	N22	W66	10	10.5		B	EKO	230	12	14	4
3938		BOUL	10	15	1430	N26	W67	10	10.4		B	CSO	120	2	13	2
3938		HOLL	10	15	1510	N22	W67	10	10.5		B	CSO	170	8	13	3
3938	23374	MWIL	10	15	1630	N22	W69	10	10.4	4	(B)					
3938		PALE	10	15	1800	N23	W68	10	10.5		B	CSO	120	7	11	3
3938		MANI	10	15	2300	N22	W74	10	10.3			CSO	110	6	12	3
3938		LEAR	10	16	0028	N22	W71	10	10.6		B	CHO	120	8	13	2
3938		RAMY	10	16	1320	N22	W85	10	10.0		B	CSO	100	2	6	3
3938	23374	MWIL	10	16	1515	N22	W81	10	10.4	3	BP					
3938		PALE	10	16	1821	N23	W88	10	10.0		A	HSX	30	1	2	3
3947		BOUL	10	11	1505	N13	W11	10	10.8		B	BXO	10	3	4	2
3947		HOLL	10	11	1535	N12	W10	10	10.9		B	BXO	30	6	5	3
3947	23383	MWIL	10	11	1545	N12	W11	10	10.8	4	(B)					
3947		MANI	10	11	2250	N14	W15	10	10.8			BXO	10	2	5	3
3947		LEAR	10	12	0028	N13	W16	10	10.8		B	BXO	10	3	3	3
3944		LEAR	10	10	0020	N09	E24	10	11.8		B	CRO	20	6	4	3
3944		MANI	10	10	0440	N07	E22	10	11.8			CSO	40	6	4	2
3944		HOLL	10	10	1430	N10	E15	10	11.7		B	CRO	30	8	4	3
3944		BOUL	10	10	1445	N10	E13	10	11.6		B	CRO	20	5	3	1
3944		RAMY	10	10	1500	N08	E16	10	11.8		B	DAO	30	5	4	4
3944	23379	MWIL	10	10	1630	N08	E15	10	11.8	3	(B)					
3944		PALE	10	10	1823	N09	E13	10	11.7		B	CRO	30	7	4	3

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3944		MANI	10	10	2255	N09	E10	10	11.7			CRO	40	7	4	3
3944		LEAR	10	11	0025	N09	E10	10	11.8		B	BXO	10	6	3	3
3944		BOUL	10	11	1505	N09	E01	10	11.7		B	BXO	10	4	3	2
3944		HOLL	10	11	1535	N09	E02	10	11.8		B	BXO	20	4	4	3
3944	23379	MWIL	10	11	1545	N08	E02	10	11.8	4	(B)					
3944		PALE	10	11	1812	N09	E01	10	11.8		B	BXO	20	4	3	3
3944		MANI	10	11	2250	N09	W03	10	11.7			AXX		1		3
3944		LEAR	10	12	0028	N09	W05	10	11.6		A	AXX		1		3
3946		HOLL	10	10	1430	S09	E25	10	12.5		B	BXO	10	2	3	3
3946		BOUL	10	10	1445	S09	E23	10	12.3		A	HRX	10	1		1
3946		RAMY	10	10	1500	S10	E26	10	12.6		A	HAX	10	1	1	4
3946	23380	MWIL	10	10	1630	S10	E24	10	12.5	3	(AP)					
3946		PALE	10	10	1823	S10	E24	10	12.6		A	AXX	10	1	1	3
3946		MANI	10	10	2255	S10	E21	10	12.5			BXO	10	3	2	3
3946		LEAR	10	11	0025	S11	E21	10	12.6		B	BXO	10	4	3	3
3946		BOUL	10	11	1505	S09	E09	10	12.3		B	BXI	10	7	4	2
3946	23380	MWIL	10	11	1545	S10	E10	10	12.4	3	(AP)					
3946		PALE	10	11	1812	S10	E08	10	12.4		A	AXX	10	2	1	3
3946		LEAR	10	12	0028	S11	E07	10	12.5		B	BXO	10	5	4	3
3946		RAMY	10	12	1315	S11	W03	10	12.3		B	BXO	10	2	3	3
3946	23380	MWIL	10	12	1500	S10	W02	10	12.5	3	(B)					
3946		HOLL	10	12	1600	S10	W03	10	12.4		B	DRO	20	4	4	3
3946		PALE	10	12	1815	S11	W03	10	12.5		B	CRO	20	3	4	3
3946		LEAR	10	13	0140	S10	W08	10	12.5		B	BXO	20	5	4	3
3946		RAMY	10	13	1435	S10	W15	10	12.5		B	BXO	20	9	6	3
3946		BOUL	10	13	1508	S08	W17	10	12.4		B	CRO	20	9	6	2
3946	23380	MWIL	10	13	1515	S10	W15	10	12.5	3	(B)					
3946		HOLL	10	13	1805	S10	W18	10	12.4		B	BXO	10	4	4	3
3946		PALE	10	13	1810	S10	W18	10	12.4		B	BXO	30	10	7	3
3946		MANI	10	14	0104	S10	W22	10	12.4			BXO	20	7	6	2
3946		LEAR	10	14	0110	S10	W21	10	12.5		B	BXO	30	8	4	3
3946		RAMY	10	14	1410	S10	W28	10	12.5		B	DAO	30	5	5	3
3946		HOLL	10	14	1514	S10	W29	10	12.5		B	CRO	40	6	4	4
3946	23380	MWIL	10	14	1530	S09	W28	10	12.5	5	(BF)					
3946		PALE	10	14	1750	S09	W30	10	12.5		B	CAO	40	5	4	3
3946		BOUL	10	14	1925	S08	W33	10	12.3		B	CSO	30	4	7	3
3946		LEAR	10	15	0105	S10	W34	10	12.5		B	DRO	60	5	4	3
3946		RAMY	10	15	1255	S10	W41	10	12.5		B	DAO	100	9	7	4
3946		BOUL	10	15	1430	S06	W42	10	12.5		B	DSO	40	2	7	2
3946		HOLL	10	15	1510	S10	W43	10	12.4		B	CSO	60	3	6	3
3946	23380	MWIL	10	15	1630	S09	W43	10	12.5	4	(B)					
3946		PALE	10	15	1800	S09	W43	10	12.5		B	DAO	40	4	6	3
3946		MANI	10	15	2300	S10	W47	10	12.4			DSO	50	4	6	3
3946		LEAR	10	16	0028	S10	W47	10	12.5		B	DSO	40	5	6	2
3946		RAMY	10	16	1320	S09	W55	10	12.4		B	DRO	60	4	8	3
3946	23380	MWIL	10	16	1515	S09	W56	10	12.4	4	(B)					
3946		BOUL	10	16	1555	S08	W57	10	12.4		B	CRO	30	3	7	2
3946		PALE	10	16	1821	S09	W58	10	12.4		B	CSO	30	4	7	3
3946		MANI	10	16	2253	S09	W60	10	12.4			CRO	60	4	7	3
3946		LEAR	10	17	0020	S09	W61	10	12.4		B	BXO	10	3	7	3
3946		RAMY	10	17	1330	S09	W69	10	12.4		A	AXX	30	1	1	3
3946		BOUL	10	17	1435	S08	W67	10	12.6		A	HRX	20	1	1	4
3946		HOLL	10	17	1450	S09	W65	10	12.7		A	AXX	10	1		4
3946	23380	MWIL	10	17	1500	S09	W65	10	12.7	4	(AF)					
3946		PALE	10	17	1818	S09	W68	10	12.7		A	AXX	10	1	1	4
3949		RAMY	10	12	1315	N03	E11	10	13.4		B	BXO	10	6	4	3
3949	23384	MWIL	10	12	1500	N03	E11	10	13.4	4	(B)					
3949		HOLL	10	12	1600	N03	E10	10	13.4		B	CRO	20	5	4	3
3949		PALE	10	12	1815	N03	E09	10	13.4		B	BXO	30	7	4	3
3949		LEAR	10	13	0140	N03	E05	10	13.4		B	CRO	30	5	4	3
3949		RAMY	10	13	1435	N03	W04	10	13.3		B	CRO	20	8	6	3
3949		BOUL	10	13	1508	N04	W04	10	13.3		B	CSO	40	14	7	2
3949	23384	MWIL	10	13	1515	N03	W04	10	13.3	4	(BY)					
3949		HOLL	10	13	1805	N03	W06	10	13.3		BG	BXO	30	14	6	3
3949		PALE	10	13	1810	N03	W06	10	13.3		B	CSO	40	9	7	3
3949		MANI	10	14	0104	N03	W10	10	13.3			CSO	50	10	7	2
3949		LEAR	10	14	0110	N03	W10	10	13.3		B	BXO	40	14	6	3
3949		RAMY	10	14	1410	N03	W18	10	13.2		BG	DAO	80	9	8	3
3949		HOLL	10	14	1514	N02	W18	10	13.3		BG	BXO	40	10	8	4

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3949	23384	MWIL	10	14	1530	N03	W18	10	13.3	4	(B)					
3949		PALE	10	14	1750	N03	W20	10	13.2		B	BXO	40	10	8	3
3949		BOUL	10	14	1925	N04	W20	10	13.3		B	CSO	30	19	10	3
3949		LEAR	10	15	0105	N03	W24	10	13.3		B	BXI	60	14	7	3
3949		RAMY	10	15	1255	N03	W31	10	13.2		B	DAO	100	15	8	4
3949		BOUL	10	15	1430	N06	W32	10	13.2		B	CSO	50	10	8	2
3949		HOLL	10	15	1510	N02	W33	10	13.2		BG	CRI	60	11	7	3
3949	23384	MWIL	10	15	1630	N03	W33	10	13.2	4	(B)					
3949		PALE	10	15	1800	N03	W34	10	13.2		B	DAO	60	9	7	3
3949		MANI	10	15	2300	N03	W37	10	13.2			DAO	70	9	7	3
3949		LEAR	10	16	0028	N03	W37	10	13.3		B	DRO	50	15	7	2
3949		RAMY	10	16	1320	N03	W44	10	13.3		B	BXO	50	6	8	3
3949	23384	MWIL	10	16	1515	N03	W45	10	13.3	4	(BF)					
3949		BOUL	10	16	1555	N04	W46	10	13.2		B	CRO	40	7	8	2
3949		PALE	10	16	1821	N04	W48	10	13.2		B	BXO	110	9	8	3
3949		MANI	10	16	2253	N04	W51	10	13.1			BXO	30	6	7	3
3949		LEAR	10	17	0020	N05	W56	10	12.8		A	AXX		1		3
3949		BOUL	10	17	1435	N04	W59	10	13.2		B	BXO	10	2	3	4
3949		HOLL	10	17	1450	N03	W58	10	13.3		B	BXO	10	4	3	4
3949	23384	MWIL	10	17	1500	N04	W62	10	13.0	2	(B)					
3949		PALE	10	17	1818	N05	W60	10	13.3		B	BXO	20	3	3	4
3949		MANI	10	18	0112	N04	W65	10	13.2			AXX	10	1		3
0003	23388	MWIL	10	13	1515	S17	W03	10	13.4	3	(AF)					
0003		HOLL	10	14	1514	S16	W12	10	13.7		A	AXX		1	1	4
3951	23385	MWIL	10	12	1500	N12	E19	10	14.1	3	(AP)					
3951		PALE	10	12	1815	N12	E18	10	14.1		B	BXO	10	4	3	3
3951		LEAR	10	13	0140	N11	E11	10	13.9		B	BXO	10	3	3	3
3951	23385	MWIL	10	13	1515	N09	E03	10	13.9	2	(AF)					
3948		RAMY	10	12	1315	N07	E25	10	14.4		B	CAO	40	12	7	3
3948	23386	MWIL	10	12	1500	N06	E25	10	14.5	4	(B)					
3948		HOLL	10	12	1600	N07	E26	10	14.6		B	DRO	90	2	6	3
3948		HOLL	10	12	1600	N12	E18	10	14.0		B	BXO	10	5	3	3
3948		PALE	10	12	1815	N07	E25	10	14.6		B	DAO	100	19	7	3
3948		LEAR	10	13	0140	N07	E20	10	14.6		B	DAI	150	22	7	3
3948		RAMY	10	13	1435	N07	E11	10	14.4		B	DAO	100	9	8	3
3948		BOUL	10	13	1508	N08	E11	10	14.5		B	DAO	110	14	9	2
3948	23386	MWIL	10	13	1515	N07	E12	10	14.5	5	(B)					
3948		HOLL	10	13	1805	N07	E10	10	14.5		B	DSO	110	16	8	3
3948		PALE	10	13	1810	N07	E11	10	14.6		B	DSO	150	19	9	3
3948		MANI	10	14	0104	N07	E07	10	14.6			DSO	130	17	8	2
3948		LEAR	10	14	0110	N07	E06	10	14.5		B	DSO	130	11	8	3
3948		RAMY	10	14	1410	N07	W04	10	14.3		B	DHO	160	8	8	3
3948		HOLL	10	14	1514	N06	W03	10	14.4		B	CSO	120	10	8	4
3948	23386	MWIL	10	14	1530	N06	W03	10	14.4	5	(B)					
3948		PALE	10	14	1750	N07	W04	10	14.4		B	CSO	80	8	7	3
3948		BOUL	10	14	1925	N08	W07	10	14.3		B	CSO	60	11	8	3
3948		LEAR	10	15	0105	N06	W08	10	14.4		B	DSO	120	5	8	3
3948		RAMY	10	15	1255	N08	W16	10	14.3		B	CHO	80	7	8	4
3948		BOUL	10	15	1430	N08	W17	10	14.3		B	CSO	50	3	7	2
3948		HOLL	10	15	1510	N06	W16	10	14.4		B	CSO	100	3	8	3
3948	23386	MWIL	10	15	1630	N07	W18	10	14.3	4	(B)					
3948		PALE	10	15	1800	N06	W17	10	14.5		B	CSO	50	3	8	3
3948		MANI	10	15	2300	N06	W23	10	14.2			CSO	80	2	8	3
3948		LEAR	10	16	0028	N05	W25	10	14.1		A	HSX	80	1	2	2
3948		RAMY	10	16	1320	N06	W32	10	14.2		B	CSO	90	2	8	3
3948	23386	MWIL	10	16	1515	N06	W31	10	14.3	5	(B)					
3948		BOUL	10	16	1555	N07	W31	10	14.3		B	CSO	40	4	8	2
3948		PALE	10	16	1821	N06	W34	10	14.2		B	CSO	70	4	4	3
3948		MANI	10	16	2253	N06	W36	10	14.3			CSO	80	7	8	3
3948		LEAR	10	17	0020	N07	W37	10	14.2		B	CSO	70	7	8	3
3948		RAMY	10	17	1330	N06	W49	10	13.9		A	HAX	60	1	2	3
3948		BOUL	10	17	1435	N07	W45	10	14.2		B	CSO	40	2	3	4
3948		HOLL	10	17	1450	N05	W47	10	14.1		A	HSX	60	1	2	4
3948	23386	MWIL	10	17	1500	N06	W47	10	14.1	5	(BF)					
3948		PALE	10	17	1818	N06	W49	10	14.1		A	HSX	60	1	1	4
3948		MANI	10	18	0112	N06	W52	10	14.2			HSX	60	1	2	3
3948		RAMY	10	18	1400	N05	W62	10	13.9		A	HSX	90	1	2	3
3948		BOUL	10	18	1435	N07	W62	10	14.0		A	HSX	40	1	1	2

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3948		HOLL	10	18	1520	N05	W60	10	14.1		A	HSX	80	1	2	3
3948		PALE	10	18	1900	N06	W63	10	14.1		A	HSX	40	1	1	2
3948		LEAR	10	19	0040	N06	W66	10	14.1		A	HSX	50	1	1	3
3948		MANI	10	19	0330	N06	W67	10	14.1			HSX	40	1	1	2
3948		RAMY	10	19	1430	N06	W71	10	14.3		A	HSX	30	1	2	3
3948		BOUL	10	19	1440	N07	W75	10	14.0		A	HSX	40	1	1	2
3948		HOLL	10	19	1508	N05	W74	10	14.1		A	HSX	60	1	2	3
3948		PALE	10	19	1930	N05	W78	10	14.0		A	HSX	60	1	2	3
3948		MANI	10	19	2353	N05	W81	10	13.9			HSX	60	1	1	3
3948		LEAR	10	20	0140	N06	W80	10	14.1		A	HSX	20	1	1	3
3956		HOLL	10	19	1508	N07	W68	10	14.5		A	AXX		2	1	3
3941		LEAR	10	12	0028	N17	E34	10	14.6		B	BXO	10	4	2	3
0004		LEAR	10	19	0040	N08	W50	10	15.3		B	BXO	10	2	3	3
0004	23397	MWIL	10	20	1530	N09	W70	10	15.4	2	(AF)					
3943		HOLL	10	09	1452	S12	E79	10	15.6		B	BXO	10	3	3	3
3943	23378	MWIL	10	09	1530	S13	E78	10	15.5	2	AP					
3943		LEAR	10	10	0020	S13	E74	10	15.6		B	CRO	10	2	3	3
3943		MANI	10	10	0440	S15	E76	10	16.0			BXO	100	2	4	2
3943		HOLL	10	10	1430	S12	E65	10	15.5		B	CRO	20	3	3	3
3943		BOUL	10	10	1445	S13	E65	10	15.5		B	CRO	30	2	3	1
3943		RAMY	10	10	1500	S13	E67	10	15.7		B	DAO	90	2	4	4
3943	23378	MWIL	10	10	1630	S14	E65	10	15.6	3	(AP)					
3943		PALE	10	10	1823	S14	E64	10	15.6		B	CRO	20	2	3	3
3943		MANI	10	10	2255	S15	E65	10	15.9			CRO	40	2	4	3
3943		LEAR	10	11	0025	S13	E61	10	15.6		B	CRO	10	2	3	3
3943		BOUL	10	11	1505	S13	E50	10	15.4		A	HRX	10	1	1	2
3943		HOLL	10	11	1535	S12	E52	10	15.6		B	CRO	30	3	3	3
3943	23378	MWIL	10	11	1545	S12	E51	10	15.5	3	(AP)					
3943		PALE	10	11	1812	S13	E50	10	15.5		A	AXX	10	1	1	3
3943		MANI	10	11	2250	S15	E48	10	15.6			AXX	20	2	1	3
3943		LEAR	10	12	0028	S12	E46	10	15.5		B	CRO	10	2	3	3
3943		RAMY	10	12	1315	S14	E40	10	15.6		B	BXO	30	4	4	3
3943	23378	MWIL	10	12	1500	S13	E37	10	15.4	3	(AP)					
3943		LEAR	10	13	0140	S13	E37	10	15.9		B	BXO	30	6	9	3
3943	23378	MWIL	10	13	1515	S12	E25	10	15.5	3	(B)					
3943	23389	MWIL	10	13	1515	S16	E23	10	15.4	3	(AP)					
3943		LEAR	10	15	0105	S17	E13	10	16.0		A	AXX		1		3
3943		RAMY	10	15	1255	S14	E08	10	16.1		B	BXO	10	3	3	4
3943		BOUL	10	15	1430	S12	E04	10	15.9		A	AXX	10	4	2	2
3943		HOLL	10	15	1510	S16	E06	10	16.1		B	BXO	30	8	3	3
3943		PALE	10	15	1800	S15	E05	10	16.1		B	BXO	10	3	3	3
3943		LEAR	10	16	0028	S14	W03	10	15.8		B	BXO	10	5	8	2
3943		RAMY	10	16	1320	S17	W08	10	15.9		B	BXO	20	2	4	3
3943	23394	MWIL	10	16	1515	S15	W07	10	16.1	4	(AF)					
3943		BOUL	10	16	1555	S14	W09	10	16.0		A	AXX	10	2	1	2
3943		PALE	10	16	1821	S15	W09	10	16.1		A	AXX	10	2	1	3
3943		MANI	10	16	2253	S15	W12	10	16.0			AXX	10	2	1	3
3943		LEAR	10	17	0020	S15	W13	10	16.0		A	AXX		1		3
3943		BOUL	10	17	1435	S12	W21	10	16.0		A	AXX		1		4
3943	23394	MWIL	10	17	1500	S15	W22	10	16.0	3	(AF)					
3945		HOLL	10	09	1452	N17	E81	10	15.8		A	AXX		1	1	3
3945		LEAR	10	10	0020	N15	E79	10	16.0		A	AXX		2	1	3
3945		HOLL	10	10	1430	N17	E70	10	15.9		A	AXX		1		3
3945		RAMY	10	10	1500	N17	E71	10	16.0		A	AXX	40	1	1	4
3945	23381	MWIL	10	10	1630	N16	E70	10	16.0	2	(AP)					
3945		PALE	10	10	1823	N16	E69	10	16.0		A	AXX	10	1	1	3
3945		MANI	10	10	2255	N15	E70	10	16.3			AXX		1		3
3945		LEAR	10	11	0025	N17	E66	10	16.0		A	AXX		1		3
3945		BOUL	10	11	1505	N16	E57	10	16.0		A	AXX		1		2
3945		HOLL	10	11	1535	N17	E57	10	16.0		A	AXX		1		3
3945	23381	MWIL	10	11	1545	N16	E57	10	16.0	2	(AP)					
3945		PALE	10	11	1812	N16	E56	10	16.0		A	AXX	10	1	1	3
3945		MANI	10	11	2250	N16	E58	10	16.4			AXX		1		3
3945		LEAR	10	12	0028	N17	E52	10	16.0		A	AXX		1		3
3945		RAMY	10	12	1315	N16	E45	10	16.0		B	BXO	10	2	2	3
3945	23381	MWIL	10	12	1500	N16	E35	10	15.3	3	(AP)					

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3945		HOLL	10	12	1600	N17	E44	10	16.0		A	AXX		1		3
3945		PALE	10	12	1815	N17	E43	10	16.0		A	AXX		1		3
3945		LEAR	10	14	0110	N18	E26	10	16.0		A	AXX		1		3
3945		HOLL	10	14	1514	N18	E17	10	15.9		A	AXX		1	1	4
3945	23390	MWIL	10	14	1530	N18	E18	10	16.0	3	(AP)					
3945		LEAR	10	15	0105	N17	E13	10	16.0		A	AXX		1		3
3945		RAMY	10	15	1255	N16	E08	10	16.1		A	AXX	10	1	1	4
		LEAR	10	17	0020	N23	E12	10	17.9		A	AXX		1		3
3952	23391	MWIL	10	14	1530	N14	E49	10	18.4	2	(AP)					
3952		HOLL	10	15	1510	N17	E40	10	18.7		A	AXX	10	1		3
3952		BOUL	10	17	1435	N17	E08	10	18.2		A	AXX		1		4
3952		HOLL	10	17	1450	N15	E07	10	18.1		B	BXO	10	3	4	4
3952	23395	MWIL	10	17	1500	N16	E11	10	18.5	4	(AP)					
3952		PALE	10	17	1818	N15	E07	10	18.3		A	AXX	10	1	1	4
3952		LEAR	10	19	0040	N14	W08	10	18.4		B	BXO	10	3	3	3
		PALE	10	12	1815	N26	E70	10	18.2		A	AXX		1		3
		RAMY	10	16	1320	N10	E25	10	18.4		B	BXO	10	2	4	3
3950		RAMY	10	12	1315	S08	E85	10	18.9		B	BXO	60	2	3	3
3950	23387	MWIL	10	12	1500	S08	E85	10	19.0	2	(AP)					
3950		HOLL	10	12	1600	S08	E83	10	18.9		A	HHX	130	1	4	3
3950		PALE	10	12	1815	S08	E83	10	19.0		A	HHX	140	1	3	3
3950		LEAR	10	13	0140	S07	E78	10	18.9		A	HSX	250	1	2	3
3950		RAMY	10	13	1435	S07	E70	10	18.9		A	HKX	320	1	4	3
3950		BOUL	10	13	1508	S08	E69	10	18.8		A	HSX	170	1	2	2
3950	23387	MWIL	10	13	1515	S08	E70	10	18.9	4	(AP)					
3950		HOLL	10	13	1805	S07	E68	10	18.9		A	HSX	250	1	2	3
3950		PALE	10	13	1810	S08	E68	10	18.9		A	HSX	250	1	2	3
3950		MANI	10	14	0104	S09	E65	10	18.9			HHX	320	1	3	2
3950		LEAR	10	14	0110	S07	E64	10	18.8		A	HHX	250	1	3	3
3950		RAMY	10	14	1410	S08	E57	10	18.9		B	CHO	330	2	3	3
3950		HOLL	10	14	1514	S06	E55	10	18.8		B	CHO	230	2	4	4
3950	23387	MWIL	10	14	1530	S08	E57	10	18.9	5	(AP)					
3950		PALE	10	14	1750	S07	E55	10	18.9		A	HHX	200	1	3	3
3950		BOUL	10	14	1925	S08	E53	10	18.8		A	HSX	210	1	2	3
3950		LEAR	10	15	0105	S07	E52	10	18.9		A	HHX	330	2	3	3
3950		RAMY	10	15	1255	S07	E44	10	18.8		B	DKO	280	3	4	4
3950		BOUL	10	15	1430	S07	E42	10	18.8		B	CSO	220	3	3	2
3950		HOLL	10	15	1510	S07	E45	10	19.0		B	CHO	350	10	9	3
3950	23387	MWIL	10	15	1630	S08	E42	10	18.8	4	(BY)					
3950		PALE	10	15	1800	S07	E42	10	18.9		B	CHO	200	5	4	3
3950		MANI	10	15	2300	S08	E39	10	18.9			CHO	90	6	4	3
3950		LEAR	10	16	0028	S06	E38	10	18.9		B	CHO	300	5	5	2
3950		RAMY	10	16	1320	S07	E30	10	18.8		B	CHO	340	10	4	3
3950	23387	MWIL	10	16	1515	S08	E30	10	18.9	5	(BP)					
3950		BOUL	10	16	1555	S08	E29	10	18.8		B	CHI	240	9	4	2
3950		PALE	10	16	1821	S08	E28	10	18.9		B	DHO	310	10	5	3
3950		MANI	10	16	2253	S08	E26	10	18.9			DHO	420	14	5	3
3950		LEAR	10	17	0020	S07	E25	10	18.9		B	DHO	340	7	5	3
3950		RAMY	10	17	1330	S07	E17	10	18.8		B	CHO	240	13	6	3
3950		BOUL	10	17	1435	S07	E16	10	18.8		BG	DKI	270	14	5	4
3950		HOLL	10	17	1450	S07	E18	10	19.0		B	DHO	300	11	5	4
3950	23387	MWIL	10	17	1500	S08	E17	10	18.9	5	(BP)					
3950		PALE	10	17	1818	S07	E15	10	18.9		BG	DKI	310	15	5	4
3950		MANI	10	18	0112	S08	E12	10	19.0			DHO	380	7	5	3
3950		RAMY	10	18	1400	S07	E04	10	18.9		B	CHO	220	8	5	3
3950		BOUL	10	18	1435	S05	E03	10	18.8		B	CSO	240	7	5	2
3950		HOLL	10	18	1520	S07	E04	10	18.9		B	DHO	350	8	5	3
3950		PALE	10	18	1900	S07	E02	10	18.9		B	DHO	300	7	5	2
3950		LEAR	10	19	0040	S07	W02	10	18.9		B	DHO	200	3	5	3
3950		MANI	10	19	0330	S08	W04	10	18.8			CHO	360	6	5	2
3950		RAMY	10	19	1430	S06	W11	10	18.8		B	CHO	250	4	3	3
3950		BOUL	10	19	1440	S07	W10	10	18.9		B	CSO	200	8	5	2
3950		HOLL	10	19	1508	S07	W09	10	19.0		B	CKO	310	8	8	3
3950		PALE	10	19	1930	S07	W11	10	19.0		B	CHO	250	6	5	3
3950		MANI	10	19	2353	S07	W15	10	18.9			CHO	340	6	5	3
3950		LEAR	10	20	0140	S07	W17	10	18.8		A	HKX	210	2	3	3

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3950		BOUL	10	20	1430	S08	W24	10	18.8		A	HHX	160	1	3	1
3950	23387	MWIL	10	20	1530	S07	W24	10	18.8	6	(BP)					
3950		HOLL	10	20	1605	S07	W25	10	18.8		B	CHO	210	3	4	3
3950		PALE	10	20	1900	S07	W26	10	18.8		A	HHX	170	1	3	2
3950		LEAR	10	21	0108	S08	W30	10	18.8		A	HSX	210	1	2	3
3950		RAMY	10	21	1420	S08	W38	10	18.7		A	HHX	220	1	3	3
3950		BOUL	10	21	1455	S08	W38	10	18.8		B	CSO	220	6	5	3
3950		HOLL	10	21	1514	S08	W37	10	18.9		B	CHO	200	2	4	4
3950	23387	MWIL	10	21	1700	S09	W38	10	18.9	5	(AP)					
3950		PALE	10	21	1830	S07	W39	10	18.8		A	HHX	150	1	3	2
3950		LEAR	10	22	0056	S07	W43	10	18.8		A	HSX	230	1	2	3
3950		MANI	10	22	0453	S07	W45	10	18.8			CHO	370	2	3	2
3950		HOLL	10	22	1515	S08	W51	10	18.8		A	HSX	180	1	2	5
3950		BOUL	10	22	1535	S07	W51	10	18.8		A	HSX	180	1	2	2
3950		PALE	10	22	1824	S07	W53	10	18.8			HSX	180	1	2	2
3950		LEAR	10	23	0032	S07	W56	10	18.8		A	HSX	250	1	2	3
3950		MANI	10	23	0411	S07	W59	10	18.8			HHX	170	1	2	2
3950		RAMY	10	23	1330	S08	W65	10	18.7		A	HKX	150	1	3	3
3950		HOLL	10	23	1515	S08	W64	10	18.8		A	HSX	250	1	2	3
3950		BOUL	10	23	1545	S07	W63	10	18.9		A	HSX	200	1	3	5
3950	23387	MWIL	10	23	1640	S09	W64	10	18.9	5	(AP)					
3950		PALE	10	23	1822	S08	W67	10	18.7		A	HSX	220	1	3	3
3950		MANI	10	23	2300	S08	W70	10	18.7			HSX	220	1	2	3
3950		LEAR	10	24	0058	S07	W69	10	18.9		A	HSX	180	1	1	3
3950		BOUL	10	24	1530	S08	W80	10	18.6		A	HSX	120	1	5	2
3950		HOLL	10	24	1554	S08	W80	10	18.7		A	HSX	140	1	2	4
3950		PALE	10	24	1830	S08	W81	10	18.7		A	HHX	200	1	4	3
3950		LEAR	10	25	0050	S07	W80	10	19.0		A	HSX	60	1	1	3
3953		BOUL	10	17	1435	N16	E24	10	19.4		B	BXO	10	2	3	4
3953		HOLL	10	17	1450	N17	E26	10	19.6		B	BXO	10	2	3	4
3953	23396	MWIL	10	17	1500	N16	E25	10	19.5	3	(B)					
3953		PALE	10	17	1818	N16	E23	10	19.5		B	BXO	10	2	3	4
		HOLL	10	22	1515	N25	W28	10	20.5		A	AXX	10	3	2	5
	23393	MWIL	10	15	1630	S14	E75	10	21.4	2	(AF)					
3958	23392	MWIL	10	15	1630	N13	E78	10	21.6	2	(AP)					
3958		MANI	10	19	2353	N10	E21	10	21.6			BXO	10	5	4	3
3958		LEAR	10	20	0140	N10	E19	10	21.5		B	BXO	10	2	3	3
3958	23399	MWIL	10	20	1530	N11	E11	10	21.5	3	(B)					
3958		HOLL	10	20	1605	N11	E10	10	21.4		B	BXO	10	3	3	3
3958		PALE	10	20	1900	N10	E09	10	21.5		B	BXO	10	4	4	2
3958		LEAR	10	21	0108	N09	E05	10	21.4		B	CRO	20	6	4	3
3958		RAMY	10	21	1420	N10	W04	10	21.3		B	DAO	80	16	5	3
3958		BOUL	10	21	1455	N10	W04	10	21.3		B	DAO	60	12	5	3
3958		HOLL	10	21	1514	N10	W03	10	21.4		B	DRO	70	12	4	4
3958	23399	MWIL	10	21	1700	N11	W03	10	21.5	4	(B)					
3958		PALE	10	21	1830	N10	W05	10	21.4		B	DSO	50	8	5	2
3958		LEAR	10	22	0056	N10	W09	10	21.4		B	DSO	90	11	5	3
3958		MANI	10	22	0453	N10	W11	10	21.4			DSO	60	13	5	2
3958		HOLL	10	22	1515	N12	W15	10	21.5		B	DAO	90	20	10	5
3958		BOUL	10	22	1535	N10	W16	10	21.4		B	CRI	50	19	5	2
3958		PALE	10	22	1824	N10	W17	10	21.5		B	DAO	60	13	5	2
3958		LEAR	10	23	0032	N11	W22	10	21.4		B	DAI	100	17	6	3
3958		MANI	10	23	0411	N10	W24	10	21.4			CRO	70	11	7	2
3958		RAMY	10	23	1330	N10	W29	10	21.4		B	CAO	50	8	5	3
3958		HOLL	10	23	1515	N11	W30	10	21.4		B	CAO	110	11	7	3
3958		BOUL	10	23	1545	N09	W29	10	21.5		B	CRI	50	9	5	5
3958	23399	MWIL	10	23	1640	N10	W28	10	21.6	3	(BP)					
3958		PALE	10	23	1822	N10	W30	10	21.5		B	CAO	30	4	3	3
3958		MANI	10	23	2300	N10	W34	10	21.4			CSO	50	3	5	3
3958		LEAR	10	24	0058	N11	W36	10	21.3		B	CRO	20	6	5	3
3958		BOUL	10	24	1530	N11	W42	10	21.5		B	BXO	10	4	3	2
3958		HOLL	10	24	1554	N10	W43	10	21.4		B	BXO	30	10	3	4
3958		PALE	10	24	1830	N10	W45	10	21.4		B	CSO	50	6	3	3
3958		LEAR	10	25	0050	N11	W48	10	21.4		B	CSO	40	4	3	3
3958		RAMY	10	25	1346	N10	W55	10	21.4		B	DSO	60	2	3	3
3958		HOLL	10	25	1750	N09	W58	10	21.4		B	CSO	30	2	3	3
3958		PALE	10	25	1910	N09	W59	10	21.4		B	CSO	30	2	3	3

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OCTOBER 1982

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3958		BOUL	10	25	1915	N12	W60	10	21.3		B	BXO	10	2	3	3
3958		LEAR	10	26	0140	N11	W61	10	21.5		B	CSO	20	2	3	3
3958		RAMY	10	26	1348	N09	W68	10	21.5		A	HSX	20	1	2	3
3958		HOLL	10	26	1509	N08	W68	10	21.5		A	HSX	20	1	2	3
3958		LEAR	10	27	0054	N08	W75	10	21.4		A	HSX	20	1	1	3
3958		RAMY	10	27	1330	N08	W79	10	21.6		A	HAX	60	1	1	4
3957		LEAR	10	19	0040	S13	E33	10	21.5		B	BXO	10	3	3	3
3957		MANI	10	19	0330	S15	E30	10	21.4			BXO	10	2	3	2
3957		RAMY	10	19	1430	S13	E22	10	21.3		A	HSX	30	1	1	3
3957		BOUL	10	19	1440	S13	E22	10	21.3		B	CRO	20	3	5	2
3957		HOLL	10	19	1508	S14	E22	10	21.3		B	DRO	30	3	4	3
3957		PALE	10	19	1930	S13	E21	10	21.4		B	DRO	20	2	4	3
3957		MANI	10	19	2353	S14	E19	10	21.4			DRO	30	5	5	3
3957		LEAR	10	20	0140	S13	E18	10	21.4		B	DRO	50	7	4	3
3957		BOUL	10	20	1430	S11	E09	10	21.3		B	BXO	20	9	4	1
3957	23398	MWIL	10	20	1530	S13	E10	10	21.4	3	(B)					
3957		HOLL	10	20	1605	S14	E09	10	21.4		B	CRO	30	5	5	3
3957		PALE	10	20	1900	S14	E08	10	21.4		B	BXO	20	6	5	2
3957		LEAR	10	21	0108	S15	E05	10	21.4		B	DRO	50	6	4	3
3957		RAMY	10	21	1420	S14	W04	10	21.3		B	DAO	40	10	4	3
3957		BOUL	10	21	1455	S12	W05	10	21.2		B	DSO	40	6	6	3
3957		HOLL	10	21	1514	S14	W04	10	21.3		B	BXO	30	6	5	4
3957	23398	MWIL	10	21	1700	S13	W03	10	21.5	4	(B)					
3957		PALE	10	21	1830	S14	W05	10	21.4		B	CRO	30	5	5	2
3957		LEAR	10	22	0056	S14	W10	10	21.3		B	CRO	30	5	4	3
3957		MANI	10	22	0453	S14	W12	10	21.3			CRO	30	6	5	2
3957		HOLL	10	22	1515	S13	W16	10	21.4		B	CRO	20	4	4	5
3957		BOUL	10	22	1535	S12	W17	10	21.4		B	BXO	10	3	3	2
3957		PALE	10	22	1824	S15	W17	10	21.5		B	BXO	10	2	2	2
3957		LEAR	10	23	0032	S13	W22	10	21.4		B	BXO	10	4	3	3
3957		MANI	10	23	0411	S14	W26	10	21.2			BXO	10	2	1	2
3957		LEAR	10	24	0058	S12	W37	10	21.3		A	AXX		1		3
		HOLL	10	22	1515	S10	W00	10	22.6		A	AXX	10	3		5
3954		RAMY	10	18	1400	S07	E69	10	23.8		B	BXO	30	2	4	3
3954		BOUL	10	18	1435	S07	E67	10	23.6		B	BXO	10	2	3	2
3954		HOLL	10	18	1520	S07	E69	10	23.8		B	CSO	10	2	3	3
3954		PALE	10	18	1900	S07	E68	10	23.9		B	CSO	20	2	3	2
3954		LEAR	10	19	0040	S07	E65	10	23.9		A	HSX	10	1	1	3
3954		MANI	10	19	0330	S06	E64	10	23.9			AXX	10	1		2
3954		RAMY	10	19	1430	S06	E55	10	23.7		A	AXX	10	1	1	3
3954		BOUL	10	19	1440	S07	E54	10	23.7		A	AXX	10	2	2	2
3954		HOLL	10	19	1508	S07	E56	10	23.8		A	AXX		2	1	3
3954		PALE	10	19	1930	S07	E53	10	23.8		A	AXX	10	2	1	3
3954		MANI	10	19	2353	S06	E51	10	23.8			AXX	20	1	1	3
3954		LEAR	10	20	0140	S07	E49	10	23.7		A	HSX	30	1	1	3
3954		BOUL	10	20	1430	S04	E41	10	23.7		B	BXO	20	7	2	1
3954	23400	MWIL	10	20	1530	S06	E41	10	23.7	3	(AP)					
3954		HOLL	10	20	1605	S07	E41	10	23.7		A	AXX	10	1	1	3
3954		PALE	10	20	1900	S07	E40	10	23.8		A	AXX		1		2
3954		LEAR	10	21	0108	S08	E36	10	23.8		A	HRX	20	1	1	3
3954		RAMY	10	21	1420	S06	E28	10	23.7		B	CAO	20	2	2	3
3954		BOUL	10	21	1455	S08	E26	10	23.6		A	AXX	10	2	2	3
3954		HOLL	10	21	1514	S07	E27	10	23.7		A	AXX	10	1	1	4
3954	23400	MWIL	10	21	1700	S06	E28	10	23.8	3	(AP)					
3954		PALE	10	21	1830	S07	E26	10	23.7		A	AXX	10	2	1	2
3954		LEAR	10	22	0056	S08	E22	10	23.7		A	HRX	20	2	1	3
3954		MANI	10	22	0453	S07	E20	10	23.7			AXX	10	2		2
3963		LEAR	10	23	0032	N13	E26	10	25.0		B	BXO	10	3	3	3
3963		RAMY	10	23	1330	N13	E19	10	25.0		B	BXO	20	4	5	3
3963		HOLL	10	23	1515	N15	E32	10	26.1		A	AXX		1		3
3963		BOUL	10	23	1545	N12	E19	10	25.1		B	CRI	40	10	5	5
3963		PALE	10	23	1822	N13	E16	10	25.0		B	DSO	50	7	5	3
3963		MANI	10	23	2300	N13	E14	10	25.0			DSO	130	7	6	3
3963		LEAR	10	24	0058	N13	E12	10	24.9		B	DAI	120	16	5	3
3963		BOUL	10	24	1530	N12	E04	10	24.9		B	DSO	140	11	7	2
3963		HOLL	10	24	1554	N13	E04	10	25.0		B	DAO	200	9	8	4
3963		PALE	10	24	1830	N12	E02	10	24.9		B	DAO	150	10	8	3

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3963		LEAR	10	25	0050	N13	W01	10	25.0		B	DSO	180	18	8	3
3963		RAMY	10	25	1346	N13	W09	10	24.9		B	DKO	190	16	9	3
3963		HOLL	10	25	1750	N12	W12	10	24.8		B	DKO	240	20	9	3
3963		PALE	10	25	1910	N12	W12	10	24.9		B	DKO	190	15	9	3
3963		BOUL	10	25	1915	N13	W12	10	24.9		B	DAO	160	14	9	3
3963		LEAR	10	26	0140	N13	W14	10	25.0		B	DSI	240	16	8	3
3963		RAMY	10	26	1348	N12	W24	10	24.8		B	DKO	150	16	9	3
3963		HOLL	10	26	1509	N12	W23	10	24.9		B	DSO	240	10	9	3
3963		LEAR	10	27	0054	N13	W28	10	24.9		B	DAO	160	12	8	3
3963		RAMY	10	27	1330	N13	W35	10	24.9		B	DKO	180	16	9	4
3963		BOUL	10	27	1445	N14	W35	10	25.0		B	DSO	100	6	9	1
3963		HOLL	10	27	2130	N12	W40	10	24.9		B	DSO	100	9	9	1
3963		MANI	10	27	2327	N13	W41	10	24.9			DAO	130	9	9	3
3963		MANI	10	28	0007	N13	W41	10	24.9			DAO	130	9	9	3
3963		LEAR	10	28	0011	N12	W41	10	24.9		B	DSO	130	12	9	3
3963		BOUL	10	28	1445	N14	W50	10	24.8		B	CSO	80	4	8	1
3963		HOLL	10	28	1710	N13	W50	10	24.9		B	DSO	100	8	8	2
3963		MANI	10	29	0157	N13	W57	10	24.8			DSO	190	7	9	3
3963		RAMY	10	29	1330	N12	W64	10	24.7		B	CAO	90	5	9	3
3963		HOLL	10	29	1530	N12	W65	10	24.7		BG	DSO	140	10	10	3
3963		LEAR	10	30	0028	N12	W69	10	24.8		B	DSO	120	7	7	3
3963		RAMY	10	30	1500	N12	W86	10	24.1		B	CAO	60	3	9	3
3963		HOLL	10	30	1529	N11	W81	10	24.5		B	DAO	80	2	4	3
3963		BOUL	10	30	1545	N11	W81	10	24.6		B	DSO	50	3	7	1
3963		MANI	10	30	2310	N11	W86	10	24.5			HSX	330	1	2	3
3963		LEAR	10	31	0051	N11	W85	10	24.6		A	HSX	20	1	1	3
3955		HOLL	10	18	1520	S08	E87	10	25.2		A	HSX	100	1	2	3
3955		PALE	10	18	1900	S10	E85	10	25.2		B	CSO	60	2	2	2
3955		LEAR	10	19	0040	S08	E80	10	25.0		A	HAX	80	3	2	3
3955		MANI	10	19	0330	S10	E81	10	25.2			DKO	120	3	10	2
3955		RAMY	10	19	1430	S09	E75	10	25.2		B	EKO	750	20	12	3
3955		BOUL	10	19	1440	S11	E75	10	25.3		B	ESO	330	5	11	2
3955		HOLL	10	19	1508	S09	E77	10	25.4		B	EKI	520	15	14	3
3955		PALE	10	19	1930	S10	E73	10	25.3		B	EKI	450	14	15	3
3955		MANI	10	19	2353	S10	E70	10	25.3			EKI	860	16	15	3
3955		LEAR	10	20	0140	S10	E70	10	25.3		B	EKI	500	13	11	3
3955		BOUL	10	20	1430	S08	E60	10	25.1		B	DAI	420	11	10	1
3955	23401	MWIL	10	20	1530	S09	E61	10	25.2	5	(B)					
3955		HOLL	10	20	1605	S09	E62	10	25.3		B	EKI	800	25	11	3
3955		PALE	10	20	1900	S09	E60	10	25.3		B	EKI	520	16	12	2
3955		LEAR	10	21	0108	S10	E56	10	25.3		B	EKI	970	31	11	3
3955		RAMY	10	21	1420	S09	E49	10	25.3		B	EKI	1020	48	13	3
3955		BOUL	10	21	1455	S10	E47	10	25.2		BGD	EKI	880	28	12	3
3955		HOLL	10	21	1514	S09	E47	10	25.2		BG	EKI	770	34	12	4
3955	23401	MWIL	10	21	1700	S09	E49	10	25.4	4	(B)					
3955		PALE	10	21	1830	S10	E46	10	25.2		BG	EKI	720	30	12	2
3955		LEAR	10	22	0056	S10	E43	10	25.3		BGD	EKC	1010	49	11	3
3955		MANI	10	22	0453	S10	E40	10	25.2			EKI	580	33	13	2
3955		HOLL	10	22	1515	S10	E33	10	25.1		BGD	EKI	840	42	12	5
3955		BOUL	10	22	1535	S10	E32	10	25.1		BD	EKI	920	53	13	2
3955		PALE	10	22	1824	S11	E33	10	25.3		BGD	EKI	810	46	12	2
3955		LEAR	10	23	0032	S10	E29	10	25.2		BGD	EKI	950	58	14	3
3955		MANI	10	23	0411	S10	E27	10	25.2			EKI	1010	8	13	2
3955		RAMY	10	23	1330	S10	E24	10	25.4		BG	EKI	300	34	14	3
3955		HOLL	10	23	1515	S10	E20	10	25.1		BGD	EKI	800	43	15	3
3955		BOUL	10	23	1545	S10	E11	10	24.5		BD	EKI	800	62	13	5
3955	23401	MWIL	10	23	1640	S10	E21	10	25.3	4	(B)					
3955		PALE	10	23	1822	S11	E18	10	25.1		BGD	EKI	760	52	13	3
3955		MANI	10	23	2300	S10	E16	10	25.2			EKI	1080	32	13	3
3955		LEAR	10	24	0058	S10	E15	10	25.2		BGD	EKI	790	49	14	3
3955		BOUL	10	24	1530	S11	E05	10	25.0		BD	EKI	450	58	14	2
3955		HOLL	10	24	1554	S10	E06	10	25.1		BGD	EKI	690	64	15	4
3955		PALE	10	24	1830	S11	E06	10	25.2		BGD	EKI	460	50	14	3
3955		LEAR	10	25	0050	S10	E02	10	25.2		BGD	EKI	570	64	13	3
3955		RAMY	10	25	1346	S10	W05	10	25.2		BGD	EKI	350	58	12	3
3955		HOLL	10	25	1750	S11	W08	10	25.1		BGD	EAI	490	50	13	3
3955		PALE	10	25	1910	S11	W08	10	25.2		BGD	EAI	520	41	13	3
3955		BOUL	10	25	1915	S10	W10	10	25.1		BGD	EAI	320	35	14	3
3955		LEAR	10	26	0140	S10	W12	10	25.2		BGD	EKI	420	33	11	3
3955		RAMY	10	26	1348	S10	W20	10	25.1		BGD	EKI	410	55	15	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1982

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3955		HOLL	10	26	1509	S11	W20	10	25.1		BGD	EKI	380	41	14	3
3955		LEAR	10	27	0054	S12	W26	10	25.1		BD	EKI	260	39	12	3
3955		RAMY	10	27	1330	S12	W31	10	25.2		BGD	FKI	300	55	17	4
3955		BOUL	10	27	1445	S07	W33	10	25.1		BG	ESI	190	29	13	1
3955		HOLL	10	27	2130	S11	W37	10	25.1		BGD	EAI	220	25	13	1
3955		MANI	10	27	2327	S11	W37	10	25.2			EKI	300	42	15	3
3955		MANI	10	28	0007	S11	W37	10	25.2			EKI	300	42	15	3
3955		LEAR	10	28	0011	S12	W39	10	25.1		BD	EAI	150	38	13	3
3955		BOUL	10	28	1445	S08	W46	10	25.2		BG	DSO	100	12	10	1
3955	23401	MWIL	10	28	1600	S11	W47	10	25.1	4	(BP)					
3955		HOLL	10	28	1710	S10	W50	10	25.0		BG	EAI	130	14	12	2
3955		LEAR	10	29	0021	S09	W51	10	25.2		BG	ERI	120	24	11	3
3955		MANI	10	29	0157	S11	W53	10	25.1			ERO	180	12	12	3
3955		RAMY	10	29	1330	S12	W60	10	25.0		B	CAO	40	6	8	3
3955		HOLL	10	29	1530	S10	W60	10	25.1		BG	DSI	80	10	9	3
3955	23401	MWIL	10	29	1600	S11	W59	10	25.2	3	(BP)					
3955		LEAR	10	30	0028	S10	W67	10	25.0		B	DRO	40	8	6	3
3955		RAMY	10	30	1500	S09	W77	10	24.8		B	BXO	30	2	4	3
3955		HOLL	10	30	1529	S10	W72	10	25.2		B	CRO	20	2	4	3
3959		LEAR	10	20	0140	N12	E77	10	25.9		A	AXX	10	2	2	3
3959		BOUL	10	20	1430	N11	E67	10	25.6		A	AXX	10	1	1	1
3959	23402	MWIL	10	20	1530	N11	E68	10	25.8	3	(B)					
3959		HOLL	10	20	1605	N12	E67	10	25.7		B	CSO	30	4	6	3
3959		PALE	10	20	1900	N11	E67	10	25.8		B	BXO	20	2	6	2
3959		LEAR	10	21	0108	N11	E64	10	25.9		B	CSO	80	4	6	3
3959		RAMY	10	21	1420	N13	E54	10	25.7		B	DAO	50	4	8	3
3959		BOUL	10	21	1455	N11	E53	10	25.6		B	CRO	10	2	9	3
3959		HOLL	10	21	1514	N12	E55	10	25.8		B	CRO	20	3	9	4
3959	23402	MWIL	10	21	1700	N11	E50	10	25.5	3	(B)					
3959		PALE	10	21	1830	N11	E53	10	25.8		B	CRO	20	2	8	2
3959		LEAR	10	22	0056	N10	E55	10	26.2		A	HRX	20	1		3
3959		MANI	10	22	0453	N10	E44	10	25.5			HRX	40	1	1	2
3959		HOLL	10	22	1515	N11	E40	10	25.6		B	CAO	30	7	14	5
3959		BOUL	10	22	1535	N11	E38	10	25.5		B	BXO	20	4	8	2
3959		PALE	10	22	1824	N10	E39	10	25.7		B	BXO	30	5	7	2
3959		LEAR	10	23	0032	N11	E33	10	25.5		B	CRO	20	5	4	3
3959		MANI	10	23	0411	N10	E27	10	25.2			BXO	40	6	9	2
3959		RAMY	10	23	1330	N12	E27	10	25.6		B	CAO	40	7	5	3
3959		HOLL	10	23	1515	N13	E21	10	25.2		BG	ESO	110	17	12	3
3959		BOUL	10	23	1545	N11	E24	10	25.5		B	CRI	80	13	5	5
3959	23402	MWIL	10	23	1640	N11	E21	10	25.3	3	(B)					
3959		PALE	10	23	1822	N11	E24	10	25.6		B	CAO	40	8	5	3
3959		MANI	10	23	2300	N11	E21	10	25.5			DSO	90	6	5	3
3959		LEAR	10	24	0058	N12	E20	10	25.5		B	DAO	50	8	5	3
3959		BOUL	10	24	1530	N11	E10	10	25.4		B	CAO	50	12	5	2
3959		HOLL	10	24	1554	N12	E11	10	25.5		B	DSO	90	16	6	4
3959		PALE	10	24	1830	N11	E10	10	25.5		B	DSO	100	9	7	3
3959		LEAR	10	25	0050	N12	E07	10	25.6		B	DSO	90	17	6	3
3959		RAMY	10	25	1346	N12	W02	10	25.4		B	DSO	100	12	7	3
3959		HOLL	10	25	1750	N12	W04	10	25.4		B	CSO	40	10	6	3
3959		PALE	10	25	1910	N12	W04	10	25.5		B	DSO	50	7	7	3
3959		BOUL	10	25	1915	N12	W05	10	25.4		B	CSO	50	6	8	3
3959		LEAR	10	26	0140	N12	W07	10	25.5		B	CSO	60	11	6	3
3959		RAMY	10	26	1348	N13	W16	10	25.4		B	CRO	60	11	7	3
3959		HOLL	10	26	1509	N12	W14	10	25.6		B	CSO	40	6	7	3
3959		LEAR	10	27	0054	N12	W21	10	25.5		B	BXO	10	11	6	3
3959		RAMY	10	27	1330	N11	W29	10	25.4		B	CAO	20	3	3	4
3959		MANI	10	27	2327	N12	W34	10	25.4			CRO	20	4	4	3
3959		MANI	10	28	0007	N12	W34	10	25.4			CRO	20	4	4	3
3959		LEAR	10	28	0011	N17	W28	10	25.9		A	AXX		2	2	3
3959		BOUL	10	28	1445	N13	W46	10	25.1		A	AXX	10	2	2	1
3959	23402	MWIL	10	28	1600	N12	W50	10	24.9	4	(BP)					
3959		RAMY	10	29	1330	N14	W51	10	25.7		B	BXX	30	4	4	3
3959		HOLL	10	29	1530	N14	W52	10	25.7		B	CRO	30	4	4	3
3959	23402	MWIL	10	29	1600	N12	W59	10	25.2	4	(B)					
3959		LEAR	10	30	0028	N14	W57	10	25.7		B	BXO		2	3	3
3959		RAMY	10	30	1500	N14	W69	10	25.4		B	BXO	30	2	3	3
3959		HOLL	10	30	1529	N13	W72	10	25.2		A	AXX		2	1	3
3959		RAMY	10	31	1339	N13	W78	10	25.7		A	AXX	10	1	1	3
3959		HOLL	10	31	1505	N13	W79	10	25.7		A	AXX		1		3

REGIONS OF SUNSPOT ACTIVITY
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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Day	Time (UT)	Lat	CMD	CMP Mo	Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3959	23402	MWIL	10	31	1630	N14	W77	10	25.9	2	(AF)					
		LEAR	10	24	0058	N18	E25	10	25.9		A	AXX		1		3
3967		RAMY	10	26	1348	N11	E02	10	26.7		B	CSO	40	5	4	3
3967		HOLL	10	26	1509	N10	E03	10	26.9		B	CRO	30	5	4	3
3967		LEAR	10	27	0054	N10	W03	10	26.8		B	CAO	20	9	5	3
3967		RAMY	10	27	1330	N09	W09	10	26.9		B	DAO	60	14	7	4
3967		HOLL	10	27	2130	N09	W14	10	26.8		B	DAO	90	10	7	1
3967		MANI	10	27	2327	N10	W15	10	26.8			DSO	40	10	7	3
3967		MANI	10	28	0007	N10	W15	10	26.9			DSO	40	10	7	3
3967		LEAR	10	28	0011	N09	W16	10	26.8		B	DRO	60	10	6	3
3967		BOUL	10	28	1445	N11	W26	10	26.7		A	HRX	10	1	1	1
3967	23406	MWIL	10	28	1600	N10	W27	10	26.6	3	(AP)					
3967		HOLL	10	28	1710	N10	W29	10	26.5		A	HRX	10	3	2	2
3967		LEAR	10	29	0021	N11	W32	10	26.6		A	HRX	10	3	1	3
3967		MANI	10	29	0157	N10	W32	10	26.7			BXO	50	4	4	3
3967		MANI	10	29	0157	N13	W30	10	26.8			BXO		2	4	3
3967		RAMY	10	29	1330	N10	W41	10	26.5		B	BXX	10	2	1	3
3967		HOLL	10	29	1530	N10	W42	10	26.5		A	HRX	30	2	2	3
3967	23406	MWIL	10	29	1600	N10	W41	10	26.6	3	(AP)					
3964		BOUL	10	22	1535	S14	E52	10	26.6		A	AXX		1		2
3964		PALE	10	22	1824	S15	E53	10	26.8		A	AXX	10	1	1	2
3964		LEAR	10	23	0032	S14	E48	10	26.7		A	AXX	10	2	1	3
3964		HOLL	10	23	1515	S14	E40	10	26.7		A	AXX		1		3
3964		BOUL	10	23	1545	S13	E39	10	26.6		A	AXX	10	1		5
3964		PALE	10	23	1822	S15	E38	10	26.6		A	AXX	10	1	1	3
3964		LEAR	10	24	0058	S15	E37	10	26.8		A	AXX		1		3
3964		HOLL	10	24	1554	S13	E25	10	26.6		A	AXX		1		4
3964		PALE	10	24	1830	S13	E23	10	26.5		A	AXX		1		3
3964		HOLL	10	25	1750	S13	E11	10	26.6		A	AXX		2	1	3
3964		PALE	10	25	1910	S13	E10	10	26.6		A	AXX		1		3
3964		LEAR	10	26	0140	S13	E07	10	26.6		B	BXO	10	2	3	3
3964		HOLL	10	26	1509	S17	E04	10	26.9		A	AXX		1		3
3964		LEAR	10	27	0054	S16	W06	10	26.6		A	AXX		2	1	3
3960		LEAR	10	21	0108	N13	E85	10	27.5		A	AXX		1		3
3960		RAMY	10	21	1420	N14	E77	10	27.4		B	DKO	280	4	9	3
3960		BOUL	10	21	1455	N12	E76	10	27.4		B	CSO	170	3	10	3
3960		HOLL	10	21	1514	N13	E75	10	27.3		B	CSO	300	5	10	4
3960	23403	MWIL	10	21	1700	N12	E78	10	27.6	4	AP					
3960		PALE	10	21	1830	N12	E77	10	27.6		B	CSO	120	3	5	2
3960		LEAR	10	22	0056	N12	E75	10	27.7		B	CSO	240	4	6	3
3960		MANI	10	22	0453	N12	E72	10	27.6			CSO	220	4	5	2
3960		HOLL	10	22	1515	N12	E70	10	27.9		B	DSO	160	7	16	5
3960		BOUL	10	22	1535	N13	E64	10	27.5		B	ESO	160	4	11	2
3960		PALE	10	22	1824	N12	E62	10	27.4		B	CAO	180	4	6	2
3960		LEAR	10	23	0032	N13	E60	10	27.6		B	DSO	230	4	8	3
3960		MANI	10	23	0411	N12	E57	10	27.5			CSO	210	4	11	2
3960		RAMY	10	23	1330	N13	E56	10	27.8		BD	CKO	210	12	10	3
3960		HOLL	10	23	1515	N15	E52	10	27.6		BD	DKO	300	13	9	3
3960		BOUL	10	23	1545	N11	E52	10	27.6		B	CAO	250	8	8	5
3960	23403	MWIL	10	23	1640	N14	E48	10	27.3	5	(AP)					
3960		PALE	10	23	1822	N12	E49	10	27.5		B	CKO	230	5	7	3
3960		MANI	10	23	2300	N12	E47	10	27.5			CAO	370	6	7	3
3960		LEAR	10	24	0058	N12	E47	10	27.6		BD	DKI	280	13	8	3
3960		BOUL	10	24	1530	N09	E40	10	27.6		B	CHO	190	13	5	2
3960		HOLL	10	24	1554	N12	E38	10	27.5		BD	DKI	270	18	9	4
3960		PALE	10	24	1830	N10	E38	10	27.6		BD	DKI	220	17	8	3
3960		LEAR	10	25	0050	N12	E34	10	27.6		BD	DKI	280	25	9	3
3960		RAMY	10	25	1346	N13	E25	10	27.5		BD	DKO	300	17	9	3
3960		HOLL	10	25	1750	N12	E24	10	27.6		BD	DKI	220	10	8	3
3960		PALE	10	25	1910	N12	E23	10	27.5		BD	DKI	270	14	7	3
3960		BOUL	10	25	1915	N12	E23	10	27.5		BG	DHI	220	27	7	3
3960		LEAR	10	26	0140	N12	E20	10	27.6		BD	DHI	260	19	6	3
3960		RAMY	10	26	1348	N12	E12	10	27.5		BD	CKO	190	10	5	3
3960		HOLL	10	26	1509	N12	E12	10	27.5		BD	DKI	250	12	7	3
3960		LEAR	10	27	0054	N12	E06	10	27.5		BD	DHI	280	12	6	3
3960		RAMY	10	27	1330	N12	E01	10	27.6		B	CKO	220	10	7	4
3960		BOUL	10	27	1445	N12	W05	10	27.2		B	ESO	200	8	13	1

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NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3960		HOLL	10	27	2130	N13	W05	10	27.5		BD	DKO	190	7	5	1
3960		MANI	10	27	2327	N13	W06	10	27.5			DKO	260	4	6	3
3960		MANI	10	28	0007	N13	W06	10	27.6			DKO	260	4	6	3
3960		LEAR	10	28	0011	N13	W07	10	27.5		B	DSI	220	7	6	3
3960		BOUL	10	28	1445	N12	W10	10	27.9		B	CSO	110	8	15	1
3960	23403	MWIL	10	28	1600	N11	W14	10	27.6	4	(B)					
3960		HOLL	10	29	1710	N12	W15	10	27.6		B	ESO	100	13	13	2
3960		LEAR	10	29	0021	N11	W19	10	27.6		B	DSO	130	6	7	3
3960		MANI	10	29	0157	N13	W20	10	27.6			DSO	130	5	5	3
3960		RAMY	10	29	1330	N11	W27	10	27.5		B	DKO	160	3	3	3
3960		HOLL	10	29	1530	N12	W26	10	27.7		B	DAO	80	5	6	3
3960	23403	MWIL	10	29	1600	N11	W27	10	27.6	4	(B)					
3960		LEAR	10	30	0028	N11	W32	10	27.6		B	DSO	90	2	3	3
3960		RAMY	10	30	1500	N12	W41	10	27.5		B	DAO	80	2	3	3
3960		HOLL	10	30	1529	N11	W41	10	27.6		B	DSO	110	3	3	3
3960		BOUL	10	30	1545	N11	W39	10	27.7		B	DAO	80	3	3	1
3960		MANI	10	30	2310	N11	W44	10	27.7			DSO	140	2	3	3
3960		LEAR	10	31	0051	N11	W45	10	27.6		B	DSO	90	3	4	3
3960		RAMY	10	31	1339	N10	W52	10	27.7		B	DAO	60	2	3	3
3960		HOLL	10	31	1505	N10	W54	10	27.6		B	DSO	40	4	3	3
3960	23403	MWIL	10	31	1630	N10	W53	10	27.7	4	(B)					
3960		MANI	10	31	2303	N11	W58	10	27.6			DSO	170	2	3	3
3960		RAMY	11	01	1237	N09	W68	10	27.4		B	DAO	60	3	3	3
3960		HOLL	11	01	1522	N09	W68	10	27.5		B	DSO	30	2	5	3
3960	23403	MWIL	11	01	1530	N10	W67	10	27.6	3	(B)					
3960		BOUL	11	01	1745	N10	W67	10	27.7		B	DSO	70	2	4	2
3960		PALE	11	01	2045	N10	W71	10	27.5		B	DSO	60	2	3	1
3960		MANI	11	01	2306	N10	W72	10	27.5			DSO	150	2	3	3
3960		LEAR	11	02	0030	N10	W73	10	27.5		B	DSO	30	2	3	3
3960		RAMY	11	02	1245	N09	W79	10	27.6		B	DAO	60	3	4	4
3960		HOLL	11	02	1545	N09	W80	10	27.6		B	CSO	10	2	3	3
3960	23403	MWIL	11	02	1600	N10	W80	10	27.7	2	B					
3960		PALE	11	02	1830	N10	W83	10	27.5		A	AXX	20	1	1	3
3968		RAMY	10	27	1330	S22	E04	10	27.9		B	BXO	10	3	2	4
3968		MANI	10	27	2327	S21	W02	10	27.8			BXO	10	2	2	3
3968		MANI	10	28	0007	S21	W02	10	27.9			BXO	10	2	2	3
3968		LEAR	10	28	0011	S21	W03	10	27.8		A	AXX		5	2	3
3968		MANI	10	29	0157	S21	W19	10	27.6			AXX		1		3
3968		HOLL	10	29	1530	S20	W19	10	28.2		B	BXO	20	3	5	3
3968	23409	MWIL	10	29	1600	S19	W20	10	28.1	3	(B)					
3968		LEAR	10	30	0028	S19	W22	10	28.3		A	AXX		2	1	3
3962		BOUL	10	22	1535	N07	E79	10	28.6		A	AXX	10	1	1	2
3962		PALE	10	22	1824	N06	E78	10	28.6		A	AXX	10	1	1	2
3962		LEAR	10	23	0032	N07	E73	10	28.5		A	AXX		1	1	3
3962		RAMY	10	23	1330	N07	E69	10	28.7		A	AXX	30	1	1	3
3962		HOLL	10	23	1515	N08	E67	10	28.7		A	HRX	10	1	1	3
3962		BOUL	10	23	1545	N08	E66	10	28.6		A	AXX	10	1		5
3962	23405	MWIL	10	23	1640	N07	E65	10	28.6	3	(AP)					
3962		PALE	10	23	1822	N06	E65	10	28.6		A	AXX	10	1	1	3
3962		MANI	10	23	2300	N07	E64	10	28.8			AXX	20	1	1	3
3962		LEAR	10	24	0058	N07	E61	10	28.6		A	AXX		1		3
3962		BOUL	10	24	1530	N06	E53	10	28.6		A	AXX		1		2
3962		HOLL	10	24	1554	N08	E52	10	28.6		A	AXX		1		4
3962		PALE	10	24	1830	N08	E50	10	28.5		A	AXX		1		3
3962		LEAR	10	25	0050	N07	E48	10	28.6		A	AXX		1		3
3962		RAMY	10	26	1348	N08	E19	10	28.0		B	BXO	20	4	3	3
3965		LEAR	10	23	0032	N15	E66	10	28.0		B	BXO	10	3	4	3
3965		LEAR	10	24	0058	N15	E53	10	28.1		B	BXO	10	3	4	3
3965		HOLL	10	24	1554	N16	E48	10	28.3		B	BXO	10	3	3	4
3965		LEAR	10	25	0050	N16	E42	10	28.2		A	AXX	10	2	1	3
3965		RAMY	10	25	1346	N16	E35	10	28.2		B	BXO	30	2	2	3
3965		HOLL	10	25	1750	N16	E32	10	28.2		B	BXO	10	3	3	3
3965		PALE	10	25	1910	N16	E31	10	28.2		B	BXO	10	2	1	3
3965		BOUL	10	25	1915	N15	E30	10	28.1		B	BXO	10	3	4	3
3965		LEAR	10	26	0140	N16	E28	10	28.2		B	BXO	10	2	3	3
3965		RAMY	10	26	1348	N13	E18	10	27.9		B	BXO	20	5	4	3
3965		RAMY	10	27	1330	N14	E08	10	28.2		B	BXO	10	4	4	4
3965		LEAR	10	28	0011	N15	E01	10	28.1		B	BXO		3	4	3

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3965		LEAR	10	29	0021	N16	W12	10	28.1		A	AXX		2	2	3
3961		HOLL	10	22	1515	S08	E73	10	28.1		A	HAX	20	1	1	5
3961		BOUL	10	22	1535	S06	E78	10	28.5		B	CRO	40	2	8	2
3961		PALE	10	22	1824	S07	E75	10	28.4		B	BXO	20	2	8	2
3961		LEAR	10	23	0032	S06	E69	10	28.2		B	CSO	20	2	6	3
3961		RAMY	10	23	1330	S06	E67	10	28.6		B	BXO	50	3	6	3
3961		HOLL	10	23	1515	S06	E63	10	28.4		B	CRO	20	5	8	3
3961		BOUL	10	23	1545	S07	E59	10	28.1		A	AXX	10	1		5
3961	23404	MWIL	10	23	1640	S08	E57	10	28.0	3	(AP)					
3961		PALE	10	23	1822	S08	E57	10	28.0		A	AXX	10	1	1	3
3961		MANI	10	23	2300	S07	E57	10	28.2			CRO	40	4	5	3
3961		LEAR	10	24	0058	S06	E55	10	28.2		B	CRO	20	6	8	3
3961		BOUL	10	24	1530	S07	E49	10	28.3		B	CSO	20	8	10	2
3961		HOLL	10	24	1554	S06	E48	10	28.3		B	CSO	100	11	11	4
3961		PALE	10	24	1830	S07	E46	10	28.2		B	CSO	90	8	10	3
3961		LEAR	10	25	0050	S06	E42	10	28.2		B	CAI	120	28	9	3
3961		RAMY	10	25	1346	S05	E35	10	28.2		B	ESI	270	31	11	3
3961		HOLL	10	25	1750	S14	E34	10	28.3		BG	DAI	250	25	12	3
3961		PALE	10	25	1910	S06	E34	10	28.3		BG	DAI	200	23	11	3
3961		BOUL	10	25	1915	S06	E32	10	28.2		BG	ESI	210	28	11	3
3961		LEAR	10	26	0140	S06	E28	10	28.2		BG	EKI	440	42	12	3
3961		RAMY	10	26	1348	S06	E20	10	28.1		B	EKI	430	55	11	3
3961		HOLL	10	26	1509	S05	E22	10	28.3		BG	EKI	620	43	15	3
3961		LEAR	10	27	0054	S06	E15	10	28.2		BG	EKI	760	50	13	3
3961		RAMY	10	27	1330	S07	E09	10	28.2		B	FKI	900	61	16	4
3961		BOUL	10	27	1445	S05	E07	10	28.1		BG	EHI	660	33	14	1
3961		HOLL	10	27	2130	S06	E03	10	28.1		BGD	EKI	780	23	14	1
3961		MANI	10	27	2327	S06	E03	10	28.2			EKI	990	34	15	3
3961		MANI	10	28	0007	S06	E03	10	28.2			EKI	990	34	15	3
3961		LEAR	10	28	0011	S06	E02	10	28.2		BG	EKI	890	34	13	3
3961		BOUL	10	28	1445	S06	W07	10	28.1		B	DHO	600	12	10	1
3961	23407	MWIL	10	28	1600	S07	W07	10	28.1	5	(D)					
3961		HOLL	10	28	1710	S06	W09	10	28.0		BD	EKO	690	20	12	2
3961		LEAR	10	29	0021	S05	W13	10	28.0		BD	EHI	840	19	11	3
3961		MANI	10	29	0157	S06	W14	10	28.0			EHO	710	19	12	3
3961		RAMY	10	29	1330	S07	W20	10	28.1		BG	EHO	560	18	11	3
3961		HOLL	10	29	1530	S06	W22	10	28.0		BGD	EKO	660	21	12	3
3961	23407	MWIL	10	29	1600	S07	W21	10	28.1	6	(D)					
3961		LEAR	10	30	0028	S06	W26	10	28.1		BG	EHO	790	16	13	3
3961		RAMY	10	30	1500	S06	W34	10	28.1		BGD	EHO	690	14	12	3
3961		HOLL	10	30	1529	S06	W34	10	28.1		BG	EHI	610	20	14	3
3961		BOUL	10	30	1545	S06	W34	10	28.1		BG	EHO	570	17	11	1
3961		MANI	10	30	2310	S06	W39	10	28.0			EHO	860	10	12	3
3961		LEAR	10	31	0051	S07	W39	10	28.1		B	DHO	580	11	10	3
3961		RAMY	10	31	1339	S08	W48	10	28.0		BG	EKO	790	14	12	3
3961		HOLL	10	31	1505	S07	W48	10	28.0		BG	EHO	700	10	13	3
3961	23407	MWIL	10	31	1630	S07	W48	10	28.1	5	(B)					
3961		MANI	10	31	2303	S07	W53	10	28.0			EHO	820	9	13	3
3961		RAMY	11	01	1237	S09	W60	10	28.0		BG	EKO	150	13	13	3
3961		HOLL	11	01	1522	S08	W63	10	27.9		BG	EHO	460	15	12	3
3961	23407	MWIL	11	01	1530	S08	W63	10	27.9	5	(B)					
3961		BOUL	11	01	1745	S07	W63	10	28.0		B	EHO	260	12	12	2
3961		PALE	11	01	2045	S08	W65	10	28.0		BG	DSO	280	7	10	1
3961		MANI	11	01	2306	S08	W66	10	28.0			EHO	540	8	12	3
3961		LEAR	11	02	0030	S08	W67	10	28.0		B	EKO	470	11	12	3
3961		RAMY	11	02	1245	S08	W77	10	27.8		B	EKO	350	15	14	4
3961		HOLL	11	02	1545	S09	W81	10	27.6		B	CHO	480	2	4	3
3961	23407	MWIL	11	02	1600	S08	W80	10	27.7	3	(AP)					
3961		PALE	11	02	1830	S09	W82	10	27.6		B	CHO	600	2	4	3
3961		MANI	11	02	2317	S08	W87	10	27.4			HSX	370	1	1	3
3961		LEAR	11	03	0006	S09	W88	10	27.4		B	CSO	110	2	3	3
0005		HOLL	10	30	1529	S16	W20	10	29.1		A	AXX		1		3
0005		MANI	10	30	2310	S16	W25	10	29.1			AXX		1		3
0005	23413	MWIL	11	01	1530	S17	W45	10	29.2	3	(AP)					
		HOLL	10	31	1505	S06	W29	10	29.5		A	AXX		1		3
3966		LEAR	10	25	0050	N07	E66	10	30.0		A	AXX		1		3
3966		HOLL	10	25	1750	N06	E55	10	29.9		A	AXX		1		3

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3966		LEAR	10	26	0140	N06	E50	10	29.8		A	AXX		1		3
3966		RAMY	10	26	1348	N08	E19	10	28.0		B	BXO	20	4	3	3
3966		BOUL	10	28	1445	N08	E17	10	29.9		A	AXX		1		1
3966	23408	MWIL	10	28	1600	N06	E16	10	29.9	3	(AF)					
3966		HOLL	10	28	1710	N08	E16	10	29.9		A	AXX	10	2	1	2
3966		LEAR	10	29	0021	N07	E13	10	30.0		B	BXO	20	9	4	3
3966		MANI	10	29	0157	N06	E12	10	30.0			BXO	20	8	4	3
3966		RAMY	10	29	1330	N07	E06	10	30.0		B	BXO	20	7	6	3
3966		HOLL	10	29	1530	N08	E04	10	29.9		B	DAO	60	8	5	3
3966	23408	MWIL	10	29	1600	N07	E04	10	30.0	3	(B)					
3966		LEAR	10	30	0028	N07	E01	10	30.1		B	DRO	50	12	7	3
3966		RAMY	10	30	1500	N08	W07	10	30.1		B	DSO	60	22	9	3
3966		HOLL	10	30	1529	N07	W07	10	30.1		B	DAO	160	25	9	3
3966		BOUL	10	30	1545	N08	W07	10	30.1		BG	DRI	130	24	8	1
3966		MANI	10	30	2310	N06	W11	10	30.1			DAI	210	18	10	3
3966		LEAR	10	31	0051	N07	W12	10	30.1		B	DAI	170	22	8	3
3966		RAMY	10	31	1339	N05	W19	10	30.1		BG	DAI	210	31	10	3
3966		HOLL	10	31	1505	N06	W20	10	30.1		B	DAO	200	18	10	3
3966	23408	MWIL	10	31	1630	N05	W20	10	30.2	5	(BY)					
3966		MANI	10	31	2303	N06	W25	10	30.1			EAO	280	19	12	3
3966		RAMY	11	01	1237	N05	W32	10	30.1		BG	DKO	160	20	9	3
3966		HOLL	11	01	1522	N05	W33	10	30.2		BG	EAO	200	17	11	3
3966	23408	MWIL	11	01	1530	N06	W33	10	30.2	5	(D)					
3966		BOUL	11	01	1745	N08	W35	10	30.1		BD	DAO	180	14	10	2
3966		PALE	11	01	2045	N06	W37	10	30.1		BGD	DAO	180	6	9	1
3966		MANI	11	01	2306	N06	W38	10	30.1			DAO	290	10	9	3
3966		LEAR	11	02	0030	N05	W39	10	30.1		B	DAO	170	12	9	3
3966		RAMY	11	02	1245	N06	W46	10	30.1		BGD	DKO	280	24	9	4
3966		HOLL	11	02	1545	N05	W48	10	30.1		BG	DAO	120	10	9	3
3966	23408	MWIL	11	02	1600	N06	W45	10	30.3	4	(D)					
3966		PALE	11	02	1830	N06	W50	10	30.0		BG	DAO	150	15	9	3
3966		MANI	11	02	2317	N05	W52	10	30.1			DAO	250	8	9	3
3966		LEAR	11	03	0006	N05	W53	10	30.0		B	DAO	130	14	10	3
3966		HOLL	11	03	1525	N05	W61	10	30.1		B	DAO	180	8	10	3
3966	23408	MWIL	11	03	1530	N06	W59	10	30.2	5	(B)					
3966		RAMY	11	03	1600	N06	W60	10	30.2		BGD	DAO	180	17	9	3
3966		BOUL	11	03	1755	N07	W54	10	30.7		B	EAI	140	12	12	2
3966		MANI	11	03	2340	N05	W66	10	30.0			DAO	180	7	9	3
3966		LEAR	11	04	0108	N07	W66	10	30.1		B	DAO	60	8	8	3
3966		HOLL	11	04	1530	N06	W72	10	30.3		B	CAO	40	6	10	3
3966	23408	MWIL	11	04	1545	N06	W70	10	30.4	4	(BF)					
3966		MANI	11	04	2335	N06	W79	10	30.1			CSO	200	4	6	3
3966		LEAR	11	05	0013	N07	W75	10	30.4		B	CSO	30	4	6	3
3966		HOLL	11	05	1535	N06	W85	10	30.3		B	DAO	40	2	5	3
3966	23408	MWIL	11	05	1545	N07	W82	10	30.5	1	AF					
0006	23419	MWIL	11	03	1530	N12	W53	10	30.6	2	(AF)					
0006	23419	MWIL	11	04	1545	N09	W67	10	30.6	2	(AF)					
3969		LEAR	10	30	0028	S10	E11	10	30.8		B	BXO	10	4	3	3
3969		RAMY	10	30	1500	S08	E04	10	30.9		B	BXO	10	3	4	3
3969		HOLL	10	30	1529	S09	E04	10	30.9		B	BXO	10	3	3	3
3969		BOUL	10	30	1545	S10	E04	10	31.0		A	AXX	10	2	1	1
3969		MANI	10	30	2310	S11	W00	10	31.0			AXX	10	1		3
3969		LEAR	10	31	0051	S11	W00	10	31.0		A	AXX	10	1		3
3969		RAMY	11	01	1237	S11	W25	10	30.6		A	AXX	10	1	1	3
3969		HOLL	11	01	1522	S11	W27	10	30.6		A	AXX		1	1	3
3969	23414	MWIL	11	01	1530	S10	W27	10	30.6	3	(AP)					
3969		BOUL	11	01	1745	S08	W28	10	30.6		B	BXO	10	2	4	2
3969		MANI	11	01	2306	S11	W27	10	30.9			BXO	10	2	3	3
3969		LEAR	11	02	0030	S11	W28	10	30.9		B	BXO	10	4	3	3
3969		RAMY	11	02	1245	S12	W36	10	30.8		B	DAO	30	2	4	4
3969		HOLL	11	02	1545	S11	W37	10	30.9		B	BXO	10	5	5	3
3969	23414	MWIL	11	02	1600	S11	W37	10	30.9	2	(B)					
3969		PALE	11	02	1830	S11	W39	10	30.8		B	BXO	10	4	4	3
3969		MANI	11	02	2317	S11	W41	10	30.9			BXO	10	3	4	3
3969		LEAR	11	03	0006	S12	W39	10	31.1		A	AXX		2	1	3
3969		HOLL	11	03	1525	S11	W54	10	30.6		B	BXO		2	3	3
3969	23414	MWIL	11	03	1530	S11	W52	10	30.7	3	(B)					
3969		LEAR	11	04	0108	S10	W62	10	30.4		B	BXO		2	3	3
3969		HOLL	11	04	1530	S11	W69	10	30.5		B	BXO	20	4	4	3

REGIONS OF SUNSPOT ACTIVITY
(ORDERED BY CENTRAL MERIDIAN PASSAGE DATE)

OCTOBER 1982

NOAA/ USAF Region	Mt Wilson Region	Sta	Observation Mo	Observation Day	Observation Time (UT)	Lat	CMD	CMP Mo	CMP Day	Max H	Mag Class	Spot Class	Corrected Area (10-6 Hemi)	Spot Count	Long. Extent (Deg)	Qual
3969	23414	MWIL	11	04	1545	S11	W68	10	30.5	3	(B)					
3969		MANI	11	04	2335	S10	W75	10	30.3			CSO	150	4	6	3
3969		LEAR	11	05	0013	S10	W73	10	30.5		B	DSO	40	2	6	3
3969		HOLL	11	05	1535	S11	W85	10	30.2		B	BXO		2	5	3
3969	23414	MWIL	11	05	1545	S11	W79	10	30.7	3	(AP)					
	23410	MWIL	10	31	1630	N14	W06	10	31.2	3	(AF)					

SUDDEN IONOSPHERIC DISTURBANCES

October 1982

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
01	0034	0043	0110	1-	1			1			0029	No data
01	0351	0358	0530	1-	1			1			0352	3919
01	0820	0823	0844	1-	3		1	1			0819	3922
01	0939	0945	1015	2	3					2	*	
01	1009	1019U	1101	1	1		1				*	
01	1146	1159	1229	1	1		1				*	
01	1645	1710	1800	1+	1					1	NF	
01	1705	1720	1810	1-	1			1			NF	
01	1800	1822	1930	2	3					5	NF	
01	1945	1952	2030	1	1	1					1955	3919
02	0003	0010	0034	1-	1			1			0002	3919
02	0047	0102	0123	1-	3			1	1		0039	3919
02	0149	0200	0220	1-	1			1			0148	X-ray
02	0656	0704	0805	1-	1			1			NF	
02	1203	1227U	1258	1	1		1				1150	X-ray
02	1401	1406	1515	1-	3	1	1	1	1	1	1406E	3919
02	1617	1645	1800	2	3					2	1621	3922
02	1645	1721	1830	1	3					2	1635	3930
02	1822	1836	1900	1-	1					1	1817	3923
02	2335	2342	0000	1-	1					1	2333	3922
03	0247	0253	0319	1-	1			1			NF	
03	0402	0408	0437	1-	2			1	1		0402	3919
03	0814	0832	0914	1	1		1				NF	
03	1027	1041	1104	1	1		1				*	
03	1226	1235	1307	1	1		1				1210	3919
03	1640	1652	1710	1-	3					2	1649	3922
03	2015	2018	2020	1	1					1	2012	3921
04	0139	0146	0211	1-	1			1			NF	
04	0210	0219	0255	1-	3			1	1		0210	X-ray
04	0400	0410	0440	1-	3			1	1		0359	X-ray
04	0539	0550	0611	1-	1			1			0533	X-ray
04	1345	1347	1415	1+	1					1	1343	X-ray
04	1649	1700	1720	1-	3	1				7	1647	X-ray
04	1744	1800	1900	1	3					6	1738	3922
04	2146	2152	2238	1-	3		1			2	2142	X-ray
04	2241	2245	2316	1-	1			1			NF	
04	2335	2344	0000	1-	1			1			2331	3930
05	0200	0220	0242	1-	3			1	1		NF	
05	0245	0256	0314	1-	3			1	1		NF	
05	0322	0329	0348	1-	1			1			NF	
05	0404	0412	0504	1-	3			1	1		NF	
05	0802	0810	0828	1	1		1				0805	3930
05	0929	0954U	1110	1	1		1				*	
05	1206	1216	1236	1	1		1				*	
05	1416	1421	1434U	1	1		1				NF	
05	1552	1605	1700	1-	1			1			1551	X-ray
05	1629	1644	1715	1	1					1	NF	
05	2144	2148	2234	1-	3			1		1	2142	X-ray
06	0017	0020	0042	1-	1			1			0012	X-ray
06	0123	0134	0220	1-	3			1	1	2	0120	X-ray
06	0136	0140	0200	1-	1					1	NF	
06	0234	0243	0300	1-	1					1	0226	3930
06	0313	0320	0345	1-	1			1			NF	
06	0502	0514	0543	1-	3			1	1	1	0500	X-ray
06	0546	0556	0706	1-	3			1	1	2	0544	3921
06	0741	0756	1000	1-	3		1	1		1	0736	X-ray
06	1815	1828	2015	2+	1					1	*	
06	1903	1945	2030	2	3					3	NF	
06	2152	2157	2212	1-	3	1		1			NF	
06	2258	2310	0102	2	5	3		1		7	2256	3922

SUDDEN IONOSPHERIC DISTURBANCES

October 1982

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
07	0113	0122	0147	1-	3			1		1	0111	No data
07	0159	0206	0244	1-	3			1	1		0202	3922
07	0251	0257	0354D	2+	5	1		1	1	6	0247	3930
07	0354E	0404	0455	1-	3			1	1		0355	No data
07	0517	0524	0550	1-	1			1			0515	X-ray
07	0658	0702	0737	1-	1					1	NF	
07	1858	1910	1945	1-	1					1	1855	3938
08	0304	0306	0320	1	1					1	0305	3936
08	1900	1907	1950	2	3					7	*	
08	1940	1953		1-	1	1					1933	3938
10	1120	1125	1145	1-	1					1	1105	X-ray
10	1255	1306	1328	1	1		1				*	
10	1600	1610	1635	1-	1			1			*	
11	0540	0551U	0614	1	1		1				NF	
11	0646	0816	0901	2	1		1				NF	
11	1054	1135U	1244	2	1		1				1045	No data
11	1340	1350	1430	1-	1			1		1	1340	X-ray
11	2208	2244	2330	1-	1			1			NF	
12	0829	0837	0856	1	1		1				NF	
12	1011	1024U	1122	1	1		1				*	
12	2250	2252	2306	1-	1			1			2248	X-ray
13	0004	0008	0026	1-	1			1			NF	
13	0917	0927	1041	1	1		1				NF	
13	1515	1538	1700U	2	3					5	NF	
13	2240	2245	2345	1+	3					5	NF	
14	0153	0155	0313	1-	5			1	1	4	0151	3950
14	1445	1511	1611	1	3					3	NF	
15	0546	0557	0627	1-	3			1	1		0543	3950
15	1149	1208	1240	1+	5	2	2	2	1	4	1144	3949
15	2035	2048	2147	1-	3			1		7	2037	3950
16	0833	0838	0855	1-	3	1			1	2	0833	3950
16	1628	1633	1705	1-	3			1		5	1628	3950
17	1257	1307	1314	1		1					NF	
18	0816	0818	0830	1	1		1				NF	
18	1022	1042U	1134	1	1		1				NF	
18	2248	2253	2315	1	1					1	2244	X-ray
19	0516	0537	0744	1-	3			1	1	1	0518	X-ray
19	1136	1146	1230	1-	3	2	2		1	2	1131	3955
19	1807	1811	1850	1-	3			1		6	1804	3955
20	1307	1319	1405	1-	1			1			1308	3955
20	1550	1555	1605	1	1		1				1543	X-ray
20	1630	1639	1715	1-	1					1	1629	3955
21	0034	0038	0120	1-	3			1	1	1	0026	3958
21	0132	0137	0152	1-	1			1			0132	X-ray
21	0243	0318	0422	1	1			1			NF	
21	0503	0517	0641	1-	3			1	1		0506	X-ray
21	0651	0656	0728	1-	3			1	1	2	0655	No data
21	0729	0747	0856	1	3			1		2	0728	No data
21	1058	1102	1117	1	3					3	1056	X-ray
21	1602	1607	1620	1-	3					4	1600	X-ray
21	2251	2302	0104	1	5			1		5	2301E	No data

SUDDEN IONOSPHERIC DISTURBANCES

October 1982

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	Number of Station Reports by Type					Known Flare	NOAA/SESC Region
						SWF	SEA	SPA	LF-SPA	SES		
22	0240	0320	0510	2	3				1	1	NF	
22	0706	0710	0752	1	3		1	1	1	2	0702	X-ray
22	0834	0841	0958	1	1		1				0825	No data
22	1014	1025	1115	2	1		1				NF	
22	1118	1128	1232	1	1		1				NF	
22	1346	1359	1456	1	1		1				NF	
22	1430	1435	1500	1-	3			1		4	1425E	3960
22	2358	0021	0119	1-	3	1		1	1	1	2357	X-ray
23	0221	0231	0341	1-	3			1	1	1	0218	3955
23	0345	0353	0432	1-	3			1	1	1	0342	X-ray
23	0438	0447	0550	1-	3			1	1		0437	3955
23	0708	0729U	0740	1	1		1				0706	3955
23	1147	1153	1210	1-	3			1	1	1	1143	X-ray
23	1254		1258	2	5	4	2	1	1	9	1253	3955
23	1328	1338	1430	1-	3		1	1		3	1321	X-ray
23	1334	1344	1510	1	3			1	1		1344E	3955
24	0019	0030	0055	1-	1			1			0020	3963
24	0200	0210	0248	1-	3			1	1	1	0204	3960
24	0420	0423	0450D	1-	3			1	1	1	0425	3955
24	0533	0540	0645	1	3			1	1	2	0534	X-ray
24	0700	0709	0810	1-	3			1	1	2	0700	3955
24	0819	0830	0918	1-	3		1	1	1	2	0816	No data
24	1509	1515	1646	2	5	3	2	1	1	13	1457	3960
25	0024	0032	0341	2+	3			1	1	1	0026	3955
25	0320	0345	0500D	1+	3	1		1	1		0325E	3955
25	0530	0536	0556	1-	1				1		0529	3955
25	1132	1141	1210	1-	3	1		1	1	4	1131	3955
25	1245	1300	1350	1	1					1	1242	3960
25	1338	1408	1500	2	3					3	NF	
25	1552	1604	1700	1	3					6	1545E	3955
25	1845	1850	1940	1+	3	1				2	1848	3955
25	2250	2307	0025D	2	5	2		1		8	2250	3955
26	0026	0030	0106U	1-	3	1			1	1	0025	3960
26	0052	0056	0200	1-	1	1			1		0047	3955
26	2202	2208	2232	1-	1			1			2202	X-ray
26	2306	2318	2354	1-	3	1		1			2304	3960
27	0050	0057	0115U	1-	3				1	1	0052	3960
27	0233	0244	0302	1-	1			1			0221	3960
27	0304	0310	0358	1	3	1		1	1	4	0305E	No data
27	0400	0412	0700	2+	3	1	1	1	1	5	0341	No data
27	0433	0442	0458U	1-	3	1			1	4	0430	X-ray
27	1043	1052	1323	2	1		1				1044	No data
27	1236	1241	1310	1-	3	1			1	1	1230	No data
27	1620	1635	1700	1	3					9	1617	3960
27	1634	1639	1720	1+	3					4	1632	3955
27	2016	2022	2100	1	3					9	2013	3960
27	2230	2235	2311	1-	1			1			2230	3960
28	0016	0033	0117	1-	1						0015	3961
28	0352	0408	0456	1-	3			1	1		0355E	3955
29	0117	0132	0230	1-	3	1		1	1	1	0120	3960
29	0520	0532	0653	1-	1			1			0522	3963
29	0817	0826	0836	1	1		1				NF	
29	1415E	1415	1505	1	1					1	1405E	3960
29	1605	1715	1825	1	1					1	1605	3963
29	2217	2234	2355	1-	1			1			2216	3955

SUDDEN IONOSPHERIC DISTURBANCES

October 1982

Day	Start (UT)	Max (UT)	End (UT)	Imp	Wide-spread Index	SWF	SEA	SPA	LF-SPA	SES	Known Flare	NOAA/SESC Region
						Number of Station Reports by Type						
30	0835	0845	0938	1	1		1				NF	
30	1056	1117	1218	2	1	1					*	
30	2211	2215	2242	1-	1			1			*	
31	1900	1923	2000	1+	3					5	*	

* = No Flare Patrol
NF = No Flare Reported
X-ray = Event observed only at X-ray wavelengths

OBSERVATORIES REPORTING FOR OCTOBER 1982*

Ayrshire, Scotland (AY)	SES	Maui, Hawaii, USA (MI)	SWF
Darmstadt, GFR (DA)	SWF	Mayfield Village, Ohio, USA (A28)	SES
Edenvale, South Africa (A52)	SES	Missoula, Montana, USA (A31)	SES, SWF
Farsta, Sweden (FS)	SES	Panska Ves, Czechoslovakia (PU)	SEA, SWF
Frenchtown, Montana, USA (A56)	SES	Paterson, New Jersey, USA (A46)	SES
Glenorchy, Tasmania, Australia (GH)	SES	Portage, Michigan, USA (A51)	SES
Hiraiso, Japan (HI)	SWF	Roswell, New Mexico, USA (RW)	SES
Hobart, Tasmania, Australia (TA)	SEA	San Antonio, Texas, USA (SA)	SES
Houston, Texas, USA (A50)	SES	Sao Paulo, Brazil (UM)	SES, SPA
Huancayo, Peru (HU)	SWF	Sofia, Bulgaria (SF)	SES
Inubo, Japan (IN)	SPA	St. Cloud, Minnesota, USA (SC)	SES
Juliusruh, GDR (JU)	SWF	Tavares, Florida, USA (A49)	SES
Kuhlungsborn, GDR (KU)	SPA, SEA	Trenton, New Jersey, (NJ) USA	SES
Lake Hiawatha, New Jersey, USA (A32)	SES	Tucson, Arizona, USA (A09)	SES
Latrobe, Pennsylvania, USA (A19)	SES	Upice, Czechoslovakia (UI)	SEA
Lintong, China (LT)	SPA	Valley Cottage, New York, USA (A01)	SES
Louisville, Kentucky, USA (A26)	SES	Walla Walla, Washington, USA (A55)	SES

*Observations are not necessarily continuous for each reporting station.

SIDs by NOAA/SESC REGION

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Region Number																															
3919	2	3	2																												
3921			1			1																									
3922	1	2	1	1		1	1																								
3923		1																													
3930		1		1	1	1	1																								
3936								1																							
3938							1	1																							
3949															1																
3950														1	2	2															
3955																			2	2			5		7	1	1	1	1		
3958																					1			2							
3960																						1		2	1	2	5		2		
3961																												1			
3963																								1					2		
X-Ray		2		6	2	4	1			1	1	1						1	1	1	4	2	3	1		1	1				
No Reported Flares	3	1	2	2	6	4	1				3	1		1			1	2			1	4			1			1		1	
No Flare Patrol	3		1		2	1		1		2		1	4																	2	1
No Data	1						2				1													1			4				
Event Totals	10	10	7	10	11	12	7	3		3	5	3	4	2	3	2	1	3	3	3	9	8	8	7	9	4	11	2	6	3	1

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1982

	Observation			Decimetric Band			Metric Band			Dekametric Band			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Spectral Type
01			CULG	0000.0	0215.0		0000.0	0245.0					IS,W
	0000	0722	CULG				0000.0	0012.0					IIIS,W
			CULG	0000.5		1							IIIB
			CULG				0004.0	0400.0	1				IIIN
			LEAR				0100.1	0101.3	1				III
			CULG				0100.5	0101.0	2				IIIB,V
			CULG	0215.0	0646.0	1	0245.0	0400.0	1				IS
			LEAR				0225.0	0330.0	1				CONT
			CULG				0237.0	0403.0					IIIS,W
			CULG				0251.0	0251.5	3	0251.5	0252.0	1	IIIG
			CULG				0251.0	0316.5	1				IIIS
			LEAR				0348.3	0400.1	1				G
			CULG				0348.5	0400.0	2				IIIN
			CULG				0400.0	0635.0	1				IN
			WEIS				0812.0	1551.0	1				IN
	0557	1627	WEIS				0849.6	0849.8	1				IIIG
			WEIS				0901.1	0901.2	1				IIIB
			WEIS				0914.3	0914.7	2				IIIG
			LEAR				0914.4	0914.7	1				III
			WEIS				1005.7	1005.9	1				IIIB
			WEIS				1007.8	1008.2	2				IIIG
			WEIS				1015.5	1015.6	1				IIIB
			WEIS				1023.9	1024.1	1				IIIB
			WEIS				1105.2	1105.3	1				IIIB
			WEIS				1112.2	1112.4	1				IIIG
			WEIS				1123.2	1123.4	1				IIIB
			WEIS				1123.2	1123.5	1				IIIB
			WEIS				1132.9	1133.1	2				IIIB
			WEIS				1146.6	1146.8	1				IIIB
			WEIS				1300.2	1300.3	1				IIIG
			WEIS				1302.1	1302.3	2				IIIG
	1315	2300	HARV	1321.0		1							IW
			HARV				1323.0	1821.0	1				INW
			HARV				1324.0		2				IIIG
			WEIS				1324.3	1324.4	1				IIIG
			HARV				1419.0	1420.0	2				IIIG
			WEIS				1419.1	1420.0	2				IIIG
			HARV				1456.0	1457.0	2				IIIB
			WEIS				1456.6	1456.8	2				IIIG
			HARV				1718.0	1720.0	2	1718.0	1720.0	2	IIIGG
			HARV				1726.0	1741.0	2	1726.0	1741.0	2	IIIN
			HARV	1740.0	2257.0	1							IN
			HARV	1746.0		1	1746.0	1748.0	3	1746.0		2	IIIGG
			SGMR				1746.0	1746.2	2				III
			PALE				1746.1	1746.3	2				III
			HARV				1821.0	2040.0	2				I
			HARV	1832.0	1835.0	2	1832.0	1835.0	2				IIIG
			HARV				1908.0	1912.0	2	1909.0	1912.0	1	IIIG
			HARV				1950.0	1951.0	2				IIIB
			HARV	1956.0		2	1956.0		1				IIIG
			HARV	2013.0	2014.0	2	2013.0	2014.0	2				IIIG
			CULG				2022.0	2058.5	1				IS,C,DC
			CULG				2022.0	2059.5	1				IIIN
			CULG	2022.0	2400.0	1							IN
	2022	2400	CULG				2022.0	2104.0					IIIS,W
			HARV				2040.0	2300.0	1				IN
			CULG				2045.0	2238.0	2				IIIN
			HARV	2159.0	2200.0	2	2159.0	2200.0	1				IIIG
			CULG	2159.5	2200.5	1							DCIM
			HARV				2237.0	2239.0	2				IIIG
			CULG				2239.0	2239.5	3				IIIG,U
			CULG	2247.5		2							IIIG
			LEAR				2358.9	2359.5	1				III
			CULG	2359.0	2359.5	1	2359.0	2400.0	2	2359.0	2359.5	1	IIIG
02			CULG	0001.5	0650.0	1	0645.5	0700.0	1	0045.5	0535.5	1	IIIN
	0000	0721	CULG	0002.0	0641.5	2	0002.0	0659.0	2				IIIN
			LEAR				0012.5	0013.4	1				III
			LEAR				0045.5	0046.2	1				III
			LEAR				0048.8	0049.0	1				III
			LEAR				0103.7	0104.2	1				III

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02			CULG	0118.0	0709.0	1							IS
			LEAR				0144.4	0152.0	1				III
			LEAR				0202.4	0219.5	1				G
			CULG				0218.5	0219.5	3	0219.0	0219.5	2	IIIB,V
			LEAR				0336.8	0337.2	1				III
			CULG	0425.0	0426.0	2							DCIM
			LEAR				0533.8	0537.5	1				III
			CULG				0549.5	0550.0	3				IIIG
			LEAR				0549.8	0621.8	1				G
			CULG	0555.0	0555.5	2							IIIG
	0559	1138	WEIS				0602.7	0603.3	1				IIIG,RS
			CULG				0607.0	0610.0	3				IIIGG
			WEIS				0607.2	0609.7	2				IIIGG
			CULG				0608.5	0616.5	3				IN
			CULG				0621.0	0621.5	3				IIIG,V
			WEIS				0621.2	0621.6	3				IIIG
			LEAR				0658.4	0659.0	1				III
			CULG				0703.5	0705.0	3	0704.5	0705.0	2	IIIG
			LEAR				0703.7	0705.0	2				III
			WEIS				0703.7	0704.6	2				IIIG
			WEIS				0804.2	0804.3	1				IIIB
			LEAR				0817.8	0821.9	1				III
			WEIS				0817.9	0823.2	2				IIIGG
			WEIS				0837.0	1612.0	1				IN
			WEIS				0856.2	0858.6	3				IIIGG
			LEAR				0856.5	0907.1	1				G
			WEIS				0906.7	0907.2	2				IIIG
			WEIS				0913.3	0913.9	1				IIIG
			WEIS				1042.2	1042.7	3				IIIG
			WEIS				1123.7	1124.9	3				IIIG
			SGMR				1124.3	1124.5	1				III
			WEIS				1130.2	1131.0	2				IIIG
			WEIS				1137.2	1138.0	3				IIIG
			SGMR				1137.6	1138.3	2				V
			SGMR				1145.5	1146.0	1				V
			SGMR				1155.4	1155.5	1				III
	1201	1624	WEIS				1311.5	1313.5	3				IIIG
			SGMR				1311.9	1318.8	1				V
	1315	2255	HARV				1316.0	1318.0	2				IIIG
			WEIS				1316.7	1317.9	3				IIIG
			HARV	1333.0	1334.0	2							IIIG
			HARV				1350.0	1520.0	1				IN
			WEIS				1357.6	1358.3	1				IIIG
			HARV	1408.0	2249.0	1							IN
			WEIS				1448.7	1449.9	3				IIIGG
			SGMR				1448.8	1449.8	2				V
			HARV	1449.0	1450.0	1	1449.0	1450.0	3	1449.0	1450.0	2	IIIGG
			HARV				1520.0	1725.0	2				IC
			HARV	1633.0		2							IIIG
			HARV				1725.0	2255.0	1				IN
			HARV				1755.0		1	1755.0			IIIBW
			HARV				1937.0	1938.0	2	1937.0	1938.0	2	IIIG
			CULG				2022.0	2308.0	1				IN
	2022	2400	CULG	2022.0	2400.0	1							IS
			CULG				2023.0	2354.0					IIIS,W
			PALE				2029.9	2030.1	1				III
			CULG				2030.0		2				IIIG
			HARV				2030.0		2	2030.0		1	IIIG
			CULG				2035.5	2335.5	1				IIIN
			CULG				2308.0	2400.0	1				IS
			LEAR				2347.8	2348.2	1				III
			CULG				2348.0		2				IIIB
03	0000	0720	CULG	0000.0	0108.0	1	0000.0	0720.0	1				IS
			CULG	0108.0	0705.0	1							IN
			CULG				0156.5	0227.5					IIIS,W
			CULG				0207.5	0542.5	1				IIIN
			LEAR				0233.7	0234.0	1				III
			LEAR				0542.1	0601.8	1				G
	0600	1621	WEIS				1039.6	1039.8	1				IIIB
	1315	2300	HARV				1315.0	1815.0	1				IN

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03			HARV				1343.0		2				IIIB
			WEIS				1343.0	1345.2	1				IIIG
			WEIS				1349.1	1351.6	1				IIIG
			WEIS				1426.2	1428.7	1				IIIG
			WEIS				1438.8	1440.3	1				IIIG
			HARV				1636.0	1637.0	2				IIIG
			HARV	1654.0	1655.0	1	1654.0	1657.0	3	1654.0	1657.0	2	IIIGG,V
			PALE				1654.8	1656.5	2				V
			SGMR				1654.8	1656.3	1				V
			HARV				1815.0	1850.0	2				I
			HARV				1850.0	2300.0	1				IN
			HARV				1952.0		1	1952.0		1	IIIBW
	2025	2400	CULG				2037.0	2233.5	1				IIIN
			CULG				2106.0	2349.0	1				IN
			CULG	2125.0	2335.0	1							IS
			CULG				2131.0	2135.0	1				IIIG
			HARV				2131.0	2135.0	2	2135.0		2	IIIGG
			CULG				2135.0	2135.5	3				IIIG
			CULG				2145.0	2200.0					CONT,W
			PALE				2235.2	2235.6	2				V
04			CULG										
	0000	0721	CULG	0009.0	0703.5	1							IS
			CULG				0020.0	0022.0	1				IIIG
			LEAR				0020.8	0021.2	1				III
			PALE				0020.8	0023.1	2				III
			CULG				0021.0		3				IIIB
			CULG				0524.5		1				IIIB
			LEAR				0524.7	0524.8	1				III
	0658	1219	WEIS				0735.7	0738.0	2				IIIG
			LEAR				0735.8	0738.2	1				III
			LEAR				0747.2	0747.7	1				III
			WEIS				0747.3	0747.8	3				IIIG
	1310	1622	WEIS										
	1315	2300	HARV				1402.0	1403.0	1				I
			HARV	1451.0		1							IW
			HARV	1840.0	1940.0	1							INW
			HARV				2020.0	2300.0	1				I
	2021	2400	CULG	2111.5	2400.0	1	2139.5	2321.5	1				IN
05	0000	0720	CULG	0000.0	0340.0	1							IN
			CULG				0004.0	0250.0	1				IS,C,DC
			CULG				0250.0	0706.0	1				IN
	0602	1620	WEIS				1058.2	1058.3	1				IIIB
			WEIS				1148.7	1149.3	1				IIIG
	1315	2255	HARV	1406.0	2206.0	1							IN
	2212	2400	CULG				2352.5		1				IIIB
06	0000	0720	CULG				0233.5	0234.5	2				IIIG
			LEAR				0233.8	0234.4	1				III
			CULG				0513.5	0514.5	2				IIIGG
			LEAR				0513.7	0514.7	1				III
			CULG	0601.0	0640.0	1							IS
			CULG				0610.5	0622.5					IIIS,W
			CULG				0651.0		1				IIIB
			LEAR				0651.3	0656.4	1				III
	0603	1127	WEIS				0651.3	0651.5	2				IIIB
			WEIS				0915.4	0915.8	1				IIIG
			WEIS				1036.9	1039.3	3				IIIG
			WEIS				1126.3	1126.7	1				IIIB
	1136	1617	WEIS				1208.8	1212.3	3				IIIG
			WEIS				1316.8	1317.1	3				IIIB
	1315	2300	HARV				1317.0		2				IIIB
			HARV				1325.0	1335.0	3				IIIGG
			WEIS				1326.3	1326.8	1				IIIG
			WEIS				1337.5	1338.2	1				IIIG
			HARV				1339.0	1340.0	2				IIIG
			HARV				1725.0		2				IIIB
			HARV	1907.0		1							IIIGW
			HARV				2008.0	2009.0	1				IIIGW
	2020	2400	CULG				2102.5	2122.0					IIIS,W

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06			HARV				2107.0	2119.0	3				IIIGG
			CULG				2108.0	2119.5	2				IIIS
			CULG				2109.5	2158.0	1				IS,C
			CULG				2110.5		2				IIIB
			CULG				2116.0		3				IIIB
			HARV				2144.0	2156.0	2				I
			CULG				2155.0	2157.5	2				IS
			CULG							2305.0	2315.0		SWF,W
07	0000	0720	CULG				0052.5	0720.0	1				IIIN
			LEAR				0052.5	0059.8	1				III
			PALE				0052.5	0052.8	2				III
			PALE				0117.9	0118.3	1				III
			CULG				0118.0		2	0118.0		1	IIIB
			CULG	0118.0	0119.0	1	0118.0	0119.5	1				IIIGG
			LEAR				0118.0	0119.7	1				III
			LEAR				0131.9	0132.2	1				III
			LEAR				0239.9	0240.4	1				III
			CULG				0240.0		2				IIIB
			CULG							0253.0	0256.0		SWF,W
			LEAR				0253.8	0254.0	1				III
			LEAR				0340.9	0342.0	1				III
			CULG				0342.0	0452.0	1				IS,C
			CULG				0417.0		2	0417.0		1	IIIB
			LEAR				0417.2	0417.4	1				III
			LEAR				0720.1	0720.4	1				III
			LEAR				0801.0	0801.3	1				III
	0605	1616	WEIS				0816.4	0818.0	1				IIIG
			LEAR				0816.5	0913.5	1				CONT
			WEIS				0820.8	0823.7	1				IIIG
			WEIS				0828.4	0833.3	1				IIIG
			WEIS				1141.3	1141.7	1				IIIG
	1315	2300	HARV				1337.0		1				IIIB
			HARV				1404.0	1509.0	2				IIIN
			HARV				1406.0	1518.0	2				I
			HARV	1412.0		1							I
	2020	2400	CULG				2248.0		1				IIIB
08	0000	0720	CULG	0129.5		1	0129.5	0130.0	2				IIIG
			LEAR				0129.9	0130.3	1				III
			CULG				0243.5	0252.0	1				IN
	0606	1125	WEIS										
	1131	1614	WEIS										
	1315	2250	HARV	1611.0		2							IIIG
			HARV				1820.0		2	1820.0		2	IIIG
	2023	2400	CULG				2320.5		1				IIIB
			LEAR				2320.6	2320.8	1				III
09			LEAR				0111.3	0111.4	1				III
	0000	0719	CULG				0408.0		1				IIIG
			LEAR				0751.8	0752.3	1				III
	0607	1611	WEIS				0751.9	0752.1	1				IIIG
			WEIS				0917.4	0917.6	1				IIIB
			WEIS				1308.9	1309.8	2				IIIG
	1315	2255	HARV				1745.0	1746.0	2	1745.0	1746.0	2	IIIG
			HARV				1959.0		2				IIIG
			HARV				2015.0	2018.0	2				IIIG
			HARV				2049.0	2051.0	2				IIIG
			HARV				2101.0	2104.0	2				IIIGG
			HARV				2110.0	2112.0	2	2110.0	2112.0	1	IIIGG
			PALE				2357.8	0001.0	2				III
			LEAR				2358.4	0001.3	1				III
10	0037	0719	CULG				0037.0	0719.0	2				IS,C
			CULG				0047.0	0633.5	1				IIIN
			CULG				0147.0	0719.0					IIIS,W
			CULG				0248.0	0652.0	2				IIIN
			LEAR				0326.9	0328.3	1				III
			CULG				0327.0	0328.0	2				IIIG
			CULG	0352.5	0353.5	2							DCIM
			LEAR				0352.8	0354.2	1				III

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10			CULG	0353.0		1	0353.0		2				IIIB
			CULG	0354.0	0616.5	1							DCIM,N
			LEAR				0530.3	0534.5	1				III
			CULG				0530.5	0531.5	2				IIIGG
			LEAR				0651.8	0651.9	1				III
	0609	1125	WEIS				0724.7	0724.8	1				IIIB
			LEAR				0724.8	0725.1	1				III
			WEIS				0816.3	0816.5	1				IIIB
			WEIS				0821.5	0821.6	1				IIIB
			WEIS				0932.5	0932.6	1				IIIB
	1216	1610	WEIS				1300.7	1300.8	1				IIIB
	1315	2255	HARV				1320.0	1426.0	2				I
			HARV				1425.0	1432.0	2				IIIGG
			SGMR				1425.6	1425.8	1				III
			WEIS				1425.6	1427.4	1				IIIG
			HARV				1426.0	2114.0	1				IN
			HARV				1512.0	2156.0	2	1624.0	2002.0	2	IIIN
			HARV				1620.0	1621.0	2				IIIG
			HARV				1623.0	1638.0	2				I,DC
			HARV				1636.0	1640.0	2	1636.0	1640.0	2	IIIGG,V
			SGMR				1638.5	1639.0	1				III
			HARV	1719.0		1	1715.0	1727.0	2	1715.0	1727.0	2	IIIGG
			HARV	1729.0	1733.0	2	1728.0	1733.0	2	1729.0	1733.0	1	IIIGG
			HARV				1751.0	1800.0	2	1751.0	1800.0	2	IIIGG
			HARV	1808.0		1	1808.0	1810.0	3	1808.0	1810.0	3	IIIGG,V
			PALE				1808.2	1808.6	3				V
			SGMR				1808.2	1810.5	2				V
			PALE				1810.2	1810.5	2				V
			HARV				1836.0	1837.0	3	1836.0	1837.0	3	IIIGG
			SGMR				1836.8	1837.2	3				V
			PALE				1836.9	1837.7	3				V
			HARV				1958.0		2	1958.0		2	IIIG
			PALE				1958.0	1958.3	1				V
	2020	2400	CULG										
11	0000	0719	CULG				0026.5	0027.0	3				IIIG
			LEAR				0026.5	0026.7	1				III
			CULG				0045.0	0719.0					IIIS,W
			CULG				0053.0	0717.5	1				IIIN
			LEAR				0100.0	0900.0	1				CONT
			CULG				0134.5	0613.5	2				IIIN
			CULG				0256.0	0420.0					IS,W
			CULG				0420.0	0655.0	1				IS
	0612	1608	WEIS				0907.4	0907.5	1				IIIB
	1327	2340	HARV	1451.0	1452.0	2							IIIG
			HARV	1453.0	1454.0	2							UNCL
			HARV	1457.0	1459.0	2							IV
			HARV	1501.0	1502.0	2							IIIG
			HARV				1600.0	2205.0	2	1729.0	1936.0	1	IIIN
			HARV	1842.0		1							IIIG
			HARV	1847.0	1848.0	2							IIIG
	2120	2400	CULG				2131.5	2317.0	1				IIIN
			CULG				2146.0		2				IIIB
			HARV				2153.0	2154.0	2				IIIG
			HARV				2243.0	2248.0	1				INW
			CULG	2300.0	2329.5	1							IN
12	0000	0718	CULG				0032.0		1				IIIB
			CULG				0222.5	0223.0	1				IIIG
			LEAR				0222.5	0223.0	1				III
			LEAR				0232.5	0232.8	1				III
			CULG	0421.5	0435.5	1							IS
			CULG	0527.5	0530.0	1							IIIG
			CULG	0550.5	0554.0	1							IS
	0612	1159	WEIS				1121.2	1125.0	1				IIIG
	1201	1606	WEIS										
	1327	2255	HARV				1922.0	1923.0	2				IIIG
	2020	2400	CULG				2114.5	2211.0	2				IIIG,N,U
			HARV				2115.0	2116.0	2				IIIGG
			HARV				2140.0		2				IIIG,U
			CULG				2149.0		2				IIIB

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12			HARV				2149.0		3				IIIB
			HARV				2200.0		1				IIIB
			HARV				2210.0	2215.0	3				IIIGG
13	0000	0718	CULG	0343.5	0349.0	1							IS
			CULG	0441.5	0607.0	1							IN
			CULG				0600.0	0718.0	1				IS
	0613	1604	WEIS										
			CULG	0655.5	0656.0	2							I
	1327	2310	HARV				1819.0	1820.0	3				IIIGG
			PALE				1819.4	1828.2	2				III
			PALE				1848.0	1850.6	2				III
	2020	2400	CULG				2058.0		1				IIIB
			CULG				2103.0	2104.5	1				IIIG
			HARV				2103.0		2				IIIG
			CULG				2103.5		2				IIIB
14	0000	0539	CULG	0014.5	0015.0	2							DCIM
	0614	1225	WEIS										
			CULG				0623.0	0623.5	1				IIIG
	1229	1604	WEIS										
	1326	2305	HARV	1338.0	1339.0	1							IW
			HARV	1627.0		1							IW
			HARV	2021.0		1							IW
15	0048	0718	CULG	0242.0	0242.5	1	0242.0	0242.5	1				IIIB
			CULG				0349.5	0350.0	3				IIIG
			LEAR				0349.6	0350.5	1				III
			LEAR				0517.9	0518.6	1				III
			CULG				0518.0	0518.5	3				IIIG,U
			CULG				0522.5		1				IIIB
			LEAR				0957.5	0957.9	1				III
	0832	1047	WEIS				0958.6	1000.3	3				IIIG
	1155	1557	WEIS										
	1327	2255	HARV				1339.0		2				IIIG
			HARV	1421.0	2243.0	1							INW
			HARV				1623.0	1627.0	2				UNCL
			HARV	1818.0	1822.0	1							IIIG
			HARV	1932.0	1933.0	2	1932.0	1933.0	2				IIIG
			CULG	2036.0	2046.0	1	2036.0	2044.0	1				IIIS
	2018	2400	CULG	2036.0	2038.0	3	2036.0	2038.0	3				IIIGG
			HARV	2036.0	2046.0	2							IV
			HARV	2036.0	2046.0	2	2036.0	2044.0	2				IIIGG
			CULG				2045.0	2057.5	1				II
			HARV				2045.0	2049.0	2				II
			CULG	2225.5		1							I
			CULG	2359.0		1	2359.0		1				IIIB
16	0000	0717	CULG				0110.0	0111.5	1				IIIG
			CULG	0350.0	0709.0	1							IN
			CULG				0533.5		3				IIIB
			CULG				0540.5		2				IIIB
			LEAR				0723.7	0724.2	1				III
	0620	1432	WEIS				0724.8	0725.2	2				U
			LEAR				0922.9	0923.5	1				III
			WEIS				0924.0	0924.7	1				U
			WEIS				1315.8	1320.6	3				IIIGG
	1327	2300	HARV	1337.0		1	1337.0		2				IIIG
			WEIS				1408.7	1410.6	2				IIIG
			HARV	1409.0	1410.0	2	1409.0	1410.0	2				IIIG
			HARV	1417.0		1							IIIBW
			HARV				1425.0	2100.0	1				INW
	1436	1556	WEIS										
			HARV	1548.0	1549.0	2							IIIG
			HARV	1629.0	1635.0	2	1630.0	1632.0	2				IIIGG,V
			HARV				1636.0	1645.0	2				II
			HARV	1658.0	1659.0	2	1659.0		1				IIIG
			HARV	1723.0	1724.0	1	1721.0	1724.0	2				IIIG
			HARV	1838.0	1913.0	1							INW
			HARV	1958.0	1959.0	1	1957.0	1959.0	2				IIIGG,U
	2017	2400	CULG	2029.0	2126.5	2	2030.5	2400.0	1				IN

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16			HARV	2029.0	2031.0	2							IIIG
			HARV				2100.0	2300.0	1				I
			CULG				2111.5	2154.5	1				IIIN
			HARV	2120.0		1							IIIBW
			CULG	2122.0	2123.0	3	2122.5	2123.0	1				IIIG
			HARV	2122.0	2123.0	2	2122.0	2123.0	2				IIIG
			CULG				2153.0	2155.0	3	2153.0	2154.5	3	IIIG,V
			HARV				2153.0	2154.0	3	2153.0	2154.0	2	IIIGG,V
			PALE				2153.1	2154.7	2				V
			LEAR				2153.9	2154.0	1				III
			CULG	2306.5	2308.0	1							IIIN
			CULG	2324.5	2325.5	2	2324.5	2325.5	2				IIIG
17	0000	0717	CULG				0000.0	0155.5	1				IS
			CULG	0206.5	0208.0	2							IS
			CULG	0530.5	0545.5	1							IIIN
			CULG				0557.0	0642.0	1				IN
	0622	1555	WEIS				1104.4	1104.7	2				IIIG
	1327	2328	HARV				1347.0	1352.0	1				IIIGW
			HARV				1351.0	2325.0	1				IN
			WEIS				1352.3	1352.9	1				IIIG
			HARV				1535.0		1				IIIB
			HARV				1545.0		2				IIIG
			HARV				1824.0	1825.0	2				IIIG
			HARV	1826.0	2307.0	1							INW
			HARV	1836.0	1837.0	2	1836.0		1				IIIG
			HARV				1914.0		2				IIIG
	2018	2400	CULG	2018.0	2038.0	1	2018.0	2134.5	1				IS
			HARV	2148.0		1							IIIB
			CULG				2327.0	2327.5	2				IIIG,U
			HARV				2327.0		2				IIIG,U
18	0000	0715	CULG										
	0621	1512	WEIS										
	1517	1553	WEIS										
			HARV				1822.02	2245.0	2				I
	1327	2300	HARV	1946.0	2113.0	1							IN
	2020	2400	CULG	2036.0	2308.5	1							IN
19	0000	0717	CULG										
	0623	1257	WEIS										
	1326	2255	HARV	1337.0	1353.0	1							I
	1418	1552	WEIS										
			HARV	1638.0	1639.0	1							IIIG
			HARV				1640.0		2				I
			HARV	1842.0		1							IIIBW
			HARV	2239.0	2240.0	1							I
	2017	2400	CULG	2326.0	2351.0	1							IN
			CULG	2351.0	2400.0	1							IS
20	0000	0717	CULG	0000.0	0226.0	1							IS
	0625	1306	WEIS										
	1327	2245	HARV	1339.0	1453.0	1							IN
			HARV	1453.0	1637.0	2							I
			HARV				1556.0	2245.0	1				IN
			HARV	1637.0	2020.0	1							IN
			HARV				1814.0		3				IIIG,U
	2017	2400	CULG	2017.0	2231.5	2							IS,DC
			HARV	2020.0	2200.0	2							I
			CULG				2047.0	2342.0	1				IN
			HARV	2200.0	2228.0	1							IN
			CULG	2246.0	2356.5	1							IS,W
21	0000	0717	CULG	0002.5	0036.5								IS,W
			CULG	0335.0	0335.5	1	0335.0	0335.5	1				IIIG
			CULG	0529.5	0532.5	1							IS,W
			CULG	0530.0		1	0530.0		1				IIIB
			CULG	0531.5	0532.0	2	0531.5	0532.0	2				IIIG
			CULG	0650.5	0651.5	1							I
	0710	1546	WEIS				0741.0	0748.5	3				II
			WEIS				1134.3	1134.4	2				IIIB

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21			WEIS				1137.5	1137.7	2				IIIG
	1327	2245	HARV	1400.0	1628.0	1							INW
			HARV	1414.0		1							IIIBW
			HARV				1526.0		2				IIIB
			HARV	1603.0		1	1603.0	1604.0	3	1603.0	1604.0	2	IIIG
			HARV				1625.0		1				IIIG
			HARV	1632.0		1	1632.0	1634.0	1				IIIBW
			HARV				1733.0	1734.0	2	1733.0	1734.0	2	IIIG
			HARV				1902.0		1				IW
			HARV				2002.0	2003.0	2				IIIG
			PALE				2002.6	2003.4	2				III
	2017	2400	CULG				2028.5	2220.0					IS,W,DC
			CULG				2117.5		2				IIIG
			CULG	2248.5	2308.5	2							IIIN
			CULG				2308.5	2309.0	1				IIIG
22	0000	0717	CULG				0111.0	0141.5	1				IN
			CULG				0310.0	0315.5	2				IIIS
			CULG				0317.5	0334.0	1				CONT
			CULG				0409.5	0504.5	2				IIIN
			CULG				0410.5	0411.0	3				IIIB
			CULG				0427.5	0609.5	1				IIIN
			CULG	0612.5	0613.0	1							I
	0622	1532	WEIS				0959.9	1000.7	1				IIIG
			WEIS				1213.4	1214.4	2				IIIG
			WEIS				1220.4	1220.9	2				IIIG
			WEIS				1326.0	1326.2	3				IIIB
			WEIS				1420.4	1420.6	1				U
			WEIS				1423.6	1423.8	2				IIIB
			WEIS				1426.6	1426.8	1				IIIB
	1327	2310	HARV	1427.0		1							IIIG
			WEIS	1427.7	1428.3	1							IIIG
			HARV				1457.0	1458.0	2				IIIB
			WEIS				1458.7	1459.0	3				IIIB
			HARV	1536.0		1							IIIGW
			HARV	1547.0		2							IIIG
			HARV				1558.0		2				IIIB
			HARV	1606.0	1607.0	1							IIIGW
			HARV				1646.0		2	1646.0		2	IIIG
			HARV				1756.0		2				IIIB
			HARV	1908.0	2212.0	1							I
	2017	2400	CULG	2025.0	2206.5								IS,W
			CULG				2048.5	2057.5	1				IIIS
			HARV				2049.0	2058.0	2				IIIGG
			CULG				2051.02	2054.0	2				IIIN
			CULG				2151.5		1				IIIB
23	0000	0734	CULG	0042.5	0044.5	1	0042.5	0044.0	2	0042.5	0044.5	1	IIIGG
			CULG				0448.0		1				IIIB
			CULG	0551.5		1							I
	0630	0816	WEIS										
			HARV	1338.0		1							IIIBW
	1327	2245	HARV				1338.0	1500.0	1				IN
			HARV				1446.0	1500.0	1				IIIGG
			HARV				1504.0	1521.0	2				IIIGG
	0818	1544	WEIS				1517.9	1518.2	3				IIIG
			WEIS				1522.4	1522.5	2				IIIB
			HARV				1654.0	1657.0	1				IIIGW
			HARV				1806.0	1846.0	2	1842.0	1846.0	1	IIIS
			HARV	1816.0	1819.0	2							IIIG
			HARV				1822.0	2245.0	2				I
			HARV				1857.0	2125.0	2	2042.0		1	IIIN
			HARV	1902.0	1904.0	2							IIIGG
			HARV	1909.0	2156.0	1							INW
	2020	2400	CULG	2020.0	2400.0	1	2020.0	2400.0	1				IS,DC
			CULG				2021.5	2341.5	1				IIIN
			CULG				2042.5	2043.0	3				IIIB
			CULG	2051.0	2052.0	2							DCIM,N
			HARV	2051.0	2052.0	3	2050.0	2051.0	2				IIIGG
			CULG				2123.0	2126.0	1				IIIS
			CULG				2153.0	2158.5	2				IS

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23			HARV				2153.0	2159.0	2				IIIGG,RS
			CULG				2330.5	2332.0	2	2330.5	2332.0	1	IIIG
			CULG				2340.5		2				IIIB
24			CULG	0000.0	0707.0	1							IS
	0000	0716	CULG				0000.0	0716.0					IS,LJ
			CULG				0021.0	0412.0	1				IIIN
			CULG				0136.5	0140.0					IIIS,W
			CULG	0520.0	0520.5	2	0520.0	0520.5	1				IIIG
			CULG				0536.5	0537.0	3	0536.5	0537.0	1	IIIG
			CULG				0625.0	0635.5	2				IIIS
			CULG				0627.5	0628.5	3				IIIG
	0626	1515	WEIS				0627.8	0630.9	3				IIIGG
			WEIS				0737.0	0746.3	3				IIIGG
			WEIS				0810.9	0811.9	2				IIIG
			WEIS				0914.4	0917.0	3				IIIG
			WEIS				0937.0	1515.0	1				IN
			WEIS				1202.0	1202.1	1				IIIB
			WEIS				1209.7	1209.8	2				IIIB
			WEIS				1225.4	1226.1	3				IIIG
			WEIS				1247.4	1247.6	3				IIIB
			WEIS				1318.1	1318.3	3				IIIB
	1326	2305	HARV				1326.0	1327.0	2				IIIB
			WEIS				1326.9	1329.6	3				IIIG
			HARV				1327.0	1640.0	2				I
			HARV				1343.0	1354.0	2				IIIGG
			WEIS				1347.2	1351.7	2				IIIG
			HARV	1406.0		2							IIIG
			HARV				1411.0	1412.0	2				IIIG
			WEIS				1412.2	1412.9	1				IIIG
			HARV	1421.0		1							IIIGW
			HARV				1456.0		2				IIIG
			HARV				1529.0	1556.0	2	1542.0	1550.0	1	IIIGG
			HARV				1604.0	1748.0	2	1604.0	1748.0	1	IIIN
			HARV				1640.0	1851.0	1				INW
			HARV				1722.0		2	1722.0		2	IIIG
	2017	2400	CULG				2052.0		1				IIIB
			HARV	2121.0	2124.0	3	2122.0	2125.0	2				IIIGG
			CULG	2122.5	2123.0	3	2122.5	2123.0	2				IIIG
			CULG	2124.0		2	2124.0		3				IIIB
			CULG				2124.5	2256.0	1				IIIN
			CULG				2145.0	2146.0	3				IIIG
			HARV	2145.0	2146.0	1	2145.0	2146.0	2				IIIGG
			PALE				2145.3	2145.7	1				III
			HARV				2149.0	2150.0	1				IIIB
			HARV				2205.0	2206.0	3	2205.0	2206.0	2	IIIG
			PALE				2205.7	2206.0	2				III
			CULG	2206.0		1	2206.0		3	2206.0		2	IIIB
			HARV	2210.0	2214.0	1							IIIGW
			HARV				2222.0	2226.0	1				IIIGW
			CULG				2254.0	2254.5	2	2254.0	2254.5	2	IIIB
			HARV				2254.0	2256.0	2				IIIG
25			PALE				0036.4	0037.0	2				III
	0000	0716	CULG	0036.5	0037.0	1	0036.5	0037.0	3	0036.5	0037.0	3	IIIG
			CULG				0119.5	0121.0	1				IIIG
			CULG	0236.0	0343.0	1							IN
			CULG	0325.0	0337.5	1							CONT
			CULG				0403.0	0652.0	1				IS,C
			CULG				0509.0	0549.0	2	0509.0	0549.0	1	IIIG,N
			CULG				0622.5	0624.5	1				IIIG
			CULG				0648.5	0649.0	3				IIIB,V
	0636	1239	WEIS				0649.4	0649.6	1				IIIB
			WEIS				0710.0	1533.0	1				IN
			CULG	0711.0	0712.5	1							DCIM,N
			WEIS				0749.6	0750.3	2				IIIG
			WEIS				1211.7	1214.5	2				IIIG
			WEIS				1223.7	1224.3	1				IIIG
	1327	2305	HARV				1337.0	1715.0	1				I
			HARV				1448.0	1449.0	2				IIIGG
	1407	1541	WEIS				1448.7	1450.6	2				IIIG

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25			HARV				1528.0	1532.0	2				IIIGG
			WEIS				1529.8	1506.0	2				IIIG
			HARV				1540.0	1543.0	2				IIIG
			HARV				1551.0	1607.0	3	1552.0	1554.0	1	IDC,IIIGG
			HARV	1558.0	1601.0	2							IV
			HARV				1613.0	1614.0	1				IIIGW
			HARV	1625.0	1626.0	1							IIIGW
			HARV	1716.0		1	1716.0	1717.0	2	1716.0		2	IIIG
			HARV	1807.0		2							IIIG
			HARV	1836.0	1839.0	2							IIIGG
			HARV				1919.0	1920.0	1	1919.0	1920.0	1	IIIGW
			HARV				1931.0	1940.0	3	1931.0	1940.0	2	IIIGG
			PALE				1939.3	1939.4	2				III
			HARV				2015.0	2016.0	2	2015.0	2016.0	2	IIIG
			PALE				2015.5	2015.8	2				III
	2016	2400	CULG				2016.0		2				IIIB
			CULG				2103.5	2120.5					IIIS,W
			CULG				2114.0		1				IIIB
			HARV	2252.0		1							IIIGW
			CULG	2254.5	2326.0	2							DCIM
			HARV	2302.0	2303.0	1							IIIG
			CULG	2304.0	2311.0	2							CONT
			HARV	2304.0	2305.0	2							IV
			CULG				2311.5	2346.0	1				IIIN
			CULG				2315.0	2400.0	1				IS,DC
			CULG				2322.5	2324.5	1				POSS II
26	0000	0716	CULG				0000.0	0101.0	1				IS,C,DC
			CULG	0006.0	0030.5	3							CONT
			CULG				0037.5	0258.0	1				IIIN
			PALE				0039.3	0047.5	2				III
			CULG				0039.5	0051.0	3				II
			CULG	0040.0	0042.0	1							CONT
			CULG	0141.5	0456.0	1							IN
			CULG	0519.5	0520.0	1	0519.5	0521.5	1				IIIG
	0634	1539	WEIS				0801.4	0803.3	2				IIIG
			WEIS				0806.3	0806.4	1				IIIB
			WEIS				0809.7	0814.7	3				IIIGG
			WEIS				0848.3	0849.9	3				IIIG
			WEIS				0923.4	0924.3	2				IIIG
			WEIS				0950.2	0950.4	1				IIIB
			WEIS				1020.1	1020.2	2				RS
			WEIS				1031.7	1031.8	1				IIIB
			WEIS				1053.5	1054.1	2				IIIG
			WEIS				1122.1	1133.6	3				IIIGG
			WEIS				1154.7	1156.2	3				IIIG
			WEIS				1239.9	1244.9	3				IIIGG
			WEIS				1318.9	1320.1	3				IIIG
	1326	2245	HARV	1330.0	1648.0	1							IN
			HARV				1334.0	2245.0	2				IN
			HARV	1344.0	1345.0	1	1344.0	1345.0	3				IIIG
			HARV				1422.0	1423.0	2				IIIG
			WEIS				1423.3	1423.7	2				IIIG
			HARV				1720.0		2				IIIB
			PALE				1744.9	1745.8	2				III
			HARV				1745.0	1746.0	3	1745.0	1746.0	2	IIIGG,V
			HARV				1813.0	1815.0	2	1813.0	1815.0	2	IIIGG
			HARV				1834.0		2				IIIG
			HARV				1839.0	1840.0	2				IIIG
	2016	2400	CULG	2016.0	2400.0	1	2016.0	2400.0	1				IS,DC
			CULG				2017.5	2038.5	1				IIIN
			HARV	2110.0	2113.0	1							IN
			HARV	2236.0	2245.0	1							IN
27			HARV										
	0000	0716	CULG	0000.0	0120.0	1	0000.0	0716.0	1				IS
			CULG				0221.0	0221.5	2	0221.0	0221.5	1	IIIB
			CULG							0407.0	0420.0	1	SWF
			CULG				0412.0	0419.0	1				II
			CULG	0428.5	0431.0	3	0428.5	0438.5	3				IS
			CULG	0428.5	0445.0	3							IV

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1982

	Observation			Decimetric Band			Metric Band			Dekametric Band			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Spectral Type
27			CULG				0431.0	0446.0	2				IV
			CULG				0433.5	0454.5	3				II
			CULG							0436.0	0442.0		SWF,W
			CULG				0439.5	0442.5	2	0440.5	0442.5	1	IIIG
	0636	0835	WEIS										
	0842	1535	WEIS				0855.7	0856.1	2				IIIG
			WEIS				1142.2	1142.6	2				IIIG
	1327	2250	HARV				1331.0	2044.0	1				IN
			HARV	1345.0	2120.0	1							INW
			HARV				1402.0	1403.0	2				IIIG
			WEIS				1403.2	1403.8	2				IIIG
			HARV				1427.0	1428.0	2				IIIG
			WEIS				1428.6	1429.0	2				IIIG
			HARV				1432.0	1434.0	3	1432.0	1433.0	1	IIIGG
			WEIS				1432.9	1434.6	3				IIIG
			HARV				1453.0	1455.0	2				IIIGG
			WEIS				1454.3	1456.0	3				IIIG
			HARV				1507.0	1517.0	3	1508.0	1517.0	2	IIIGG
			WEIS				1507.8	1508.0	1				IIIG
			WEIS				1511.3	1511.5	1				IIIB
			WEIS				1515.4	1515.7	2				IIIG
			WEIS				1517.6	1517.8	2				IIIG
			HARV				1539.0	1540.0	2				IIIB
			HARV				1553.0		1				IIIBW
			HARV	1613.0		1	1605.0	1613.0	3	1609.0	1613.0	2	IIIGG
			HARV	1618.0	1619.0	1	1616.0	1621.0	3	1616.0	1621.0	2	IIIGG
			HARV				1643.0	1644.0	2	1643.0		1	IIIGG
			HARV				1708.0	1709.0	2	1708.0	1709.0	1	IIIG
			HARV				1739.0	1740.0	3	1739.0	1740.0	2	IIIG,V
			PALE				1739.3	1739.6	2				III
			HARV				1819.0		2	1819.0		2	IIIB
			HARV	1943.0	1944.0	2	1943.0	1944.0	3	1943.0	1944.0	2	IIIGG
			PALE				1943.5	1944.6	2				III
			HARV				1947.0	1949.0	1				IIIGW
			HARV				2002.0		1				IIIGW
			HARV				2023.0		1				IIIGGW
			HARV				2044.0	2128.0	2				I
	2025	2400	CULG				2045.0	2127.5	1				IS
			CULG				2049.0	2054.0	1				IIIS
			CULG				2051.0	2053.5	3				IS
			HARV				2052.0	2053.0	2				IIIGG
			HARV				2128.0	2250.0	1				IN
			CULG				2219.5	2222.0	1				IIIG
			HARV				2221.0	2222.0	2				IIIG
			CULG	2307.0	2326.5	1							IN
			CULG				2339.0		1	2339.0	2339.5	1	IIIB
28	2016	2400	CULG	0016.5	2400.0	2							IS,C,DC
	0000	0716	CULG	0124.5	0502.0	1	0026.0	0356.5	1				IN
			CULG	0226.5		1							IIIG
			CULG				0241.0	0242.0	1	0241.0	0242.0	1	IIIG
			CULG				0356.5	0520.0	1				IS,C,DC
			CULG	0502.0	0520.0								IS,L
			CULG				0612.5	0613.5	1				DC
			CULG	0648.0	0716.0	1							IS,DC
	0632	1535	WEIS				0729.0	1530.0	1				IN
			WEIS				1008.4	1014.3	3				IIIGG
			WEIS				1046.2	1047.8	2				IIIG
			WEIS				1106.0	1106.4	3				IIIG
			WEIS				1112.4	1113.4	2				IIIG
			WEIS				1119.8	1120.0	2				IIIB
			WEIS				1121.0	1534.0	2				IIIS/IS
	1327	2315	HARV				1327.0	1620.0	2				IC
			HARV				1346.0	1624.0	2				IIIS
			HARV	1352.0	2315.0	2							I
			HARV				1531.0	1534.0	2	1531.0		1	IIIGG
			HARV	1558.0	1559.0	1	1555.0	1603.0	3	1555.0	1602.0	2	IIIGG
			HARV	1616.0	1619.0	2	1616.0	1619.0	3	1616.0	1619.0	2	IIIGG,V
			HARV				1620.0	2315.0	1				IN
			HARV	1624.0	1837.0	1	1624.0	2239.0	2	1637.0	1932.0	1	IIIN
			HARV				1759.0	1800.0	2	1800.0		2	IIIG

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1982

	Observation			Decimetric Band			Metric Band			Dekametric Band			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Spectral Type
28			PALE				1759.8	1800.1	2				III
			HARV	1857.0	1901.0	1	1857.0	1901.0	3	1857.0	1901.0	2	IIIGG,V
			PALE				1900.7	1901.6	2				V
			CULG				2016.5	2214.0					IIIS,W
			CULG				2057.5	2328.0	1				IIIN
			CULG				2145.0	2146.0	2	2145.0	2146.0	2	IIIG
			HARV				2145.0	2146.0	2	2146.0		1	IIIG
			PALE				2145.7	2146.2	2				III
			HARV	2217.0	2219.0	1	2217.0	2219.0	2				IV
			CULG	2217.5	2220.0	2	2217.5	2218.5	1				CONT
			CULG				2251.0	2356.0	1				IN
29	0000	0716	CULG	0000.0	0716.0	2							IS,C,DC
			PALE				0112.8	0121.4	2				V
			CULG	0118.5	0120.5	1	0112.5	0121.0	3	0113.0	0121.0	3	IIIS
			CULG				0437.0	0438.0	1				IIIG
			CULG				0548.5		1				IIIB
			CULG				0642.5	0643.5	2				IIIG
	0631	1047	WEIS				0700.0	1437.0	1				IN
	1326	2255	HARV	1326.0	2250.0	1							I
			HARV				1334.0	1630.0	1				INW
			HARV	1407.0	1409.0	1	1407.0	1412.0	2				IV P
	1053	1535	WEIS				1432.1	1432.3	1				IIIB
			HARV				1525.0	1527.0	2	1525.0	1526.0	2	IIIG
			WEIS				1526.7	1527.1	1				IIIG
			HARV				1532.0	2159.0	2	1715.0	1815.0	1	IIIN
			HARV				1546.0		2	1546.0		2	IIIG
			HARV				1552.0	1554.0	2				IIIG
			HARV				1616.0	1628.0	2				UNCL,DC
			HARV				1619.0	1625.0	2	1619.0	1623.0	1	IIIGG
			HARV				1628.0	1629.0	2				IIIG
			HARV				1630.0	1710.0	2	1655.0	1710.0	1	IC
			HARV	1644.0	1658.0	3							IV
			HARV				1652.0	1657.0	2				UNCL,P
			HARV				1710.0	1925.0	1				IN
			HARV				1721.0	1723.0	2	1721.0	1723.0	1	IIIG
			HARV				1735.0	1740.0	2	1735.0	1740.0	2	IIIGG
			HARV				1747.0	1754.0	3	1747.0	1754.0	2	IIIGG,V
			HARV				1823.0	1840.0	2	1823.0	1840.0	2	IIIGG
			PALE				1823.2	1823.3	1				III
			PALE				1832.0	1832.9	1				III
			PALE				1848.8	1849.2	2				V
			HARV	1849.0		2	1845.0	1849.0	3	1845.0	1849.0	2	IIIGG,V
			HARV				1907.0	1908.0	2	1907.0	1908.0	2	IIIG
			HARV				1925.0	2040.0	1				I
			HARV				1935.0	1940.0	2				IIIGG
			PALE				1949.8	1952.2	3				V
			HARV				1950.0	2001.0	3	1950.0	2001.0	3	IIIGG
			PALE				1953.0	2000.8	2				V
	2016	2400	CULG	2016.0	2045.0	2	2016.0	2326.0	1				IS,C,DC
			CULG				2039.5	2357.5	1				IIIN
			HARV				2040.0	2240.0	1				IN
			CULG	2045.0	2311.0	1							IN
			HARV				2046.0	2056.0	2	2046.0	2056.0	2	IIIGG
			CULG				2046.5	2047.5	2				IIIG
			PALE				2046.5	2047.5	2				III
			CULG				2052.0	2052.5	3				IIIG
			PALE				2052.0	2055.8	2				V
			CULG				2053.5	2243.5	2				IIIN
			CULG				2054.0	2056.0	3	2054.5	2055.6	2	IIIGG
			HARV				2117.0	2118.0	2				IIIG
			CULG				2201.5	2202.5	3				IIIG
			HARV				2202.0	2209.0	2	2202.0	2205.0	1	IIIGG
			PALE				2202.5	2209.2	2				III
			CULG				2236.0	2237.0	3	2236.0	2237.0	2	IIIG
			HARV				2236.0		2				IIIG
			PALE				2236.3	2236.6	2				III
			CULG	2311.0	2400.0	1							IS
30	0000	0716	CULG	0000.0	0716.0	1							IS,C,DC
			CULG				0056.0	0254.0	1				IIIN

SOLAR RADIO EMISSION
SPECTRAL OBSERVATIONS

OCTOBER 1982

	Observation			Decimetric Band			Metric Band			Dekametric Band			
Day	Start (UT)	End (UT)	Sta	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Start (UT)	End (UT)	Int (1-3)	Spectral Type
30			CULG				0104.0	0105.0	3	0104.5	0105.5	3	IIIG
			PALE				0104.5	0105.1	2				III
			CULG				0105.5	0403.0	2	0105.5	0350.0	2	IIIN
			CULG				0145.5		3				IIIB
			CULG				0301.5	0313.0	1				IN
	0640	1515	WEIS				0656.0	1458.0	2				IS
	1326	2332	HARV	1327.0	2332.0	1							I
			HARV				1333.0	2000.0	1				IN
			HARV				1736.0		1				IIIB
			HARV				1857.0		1				IIIBW
			HARV	1932.0	1933.0	1	1931.0	1936.0	2	1932.0	1934.0	1	IIIGG
			PALE				1932.6	1933.0	2				III
			HARV				2000.0	2015.0	2				I
			HARV				2024.0		2	2024.0		2	IIIG
	2041	2400	CULG	2120.0	2212.0	1							IS,C,DC
			HARV				2139.0	2227.0	1				I
			CULG	2212.0	2346.0	1							IN
31	0643	1317	WEIS				0654.0	1526.0	1				IN
	1326	2332	HARV				1332.0	1442.0	1				IN
			HARV	1339.0	1810.0	1							INW
	1343	1529	WEIS										
			HARV	1418.0		2							IIIG
			HARV	1636.0		2							IIIG,U
			HARV	1720.0		1							IIIG
			HARV	1810.0	2014.0	2							I
			HARV	1942.0		2							IIIG
			HARV				1947.0	2103.0	1				INW
			HARV				1952.0	1953.0					IIIGW
			HARV	2014.0	2332.0	1							IN
			HARV				2107.0	2323.0	3				I,DC
			HARV				2132.0		2				IIIG
			HARV	2142.0		1	2142.0		2				IIIG
			HARV				2323.0		1				IIIG

The symbols used under the column heading SPECTRAL TYPE have the following definitions:

B = Single burst
G = Small group (< 10) of bursts
GG = Large group (> 10) of burst
C = Underlying continuum (particularly with Type I)
S = Storm in the sense of intermittent but apparently connected activity
N = Intermittent activity in this period
U = U-shaped burst of Type III

RS = Reverse slope burst
DP = Drifting pairs
DC = Drifting Chains
H = Herringbone
W = Weak
P = Pulsations
CONT = Continuum
UNCLF = Unclassified activity
DCIM = Fast drift

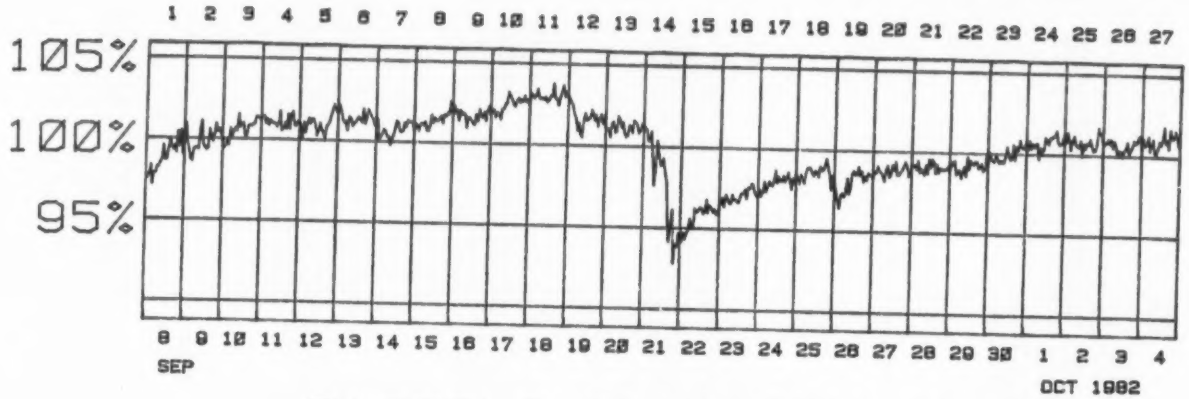
COSMIC RAY INDICES

(Neutron Monitor)
October 1982

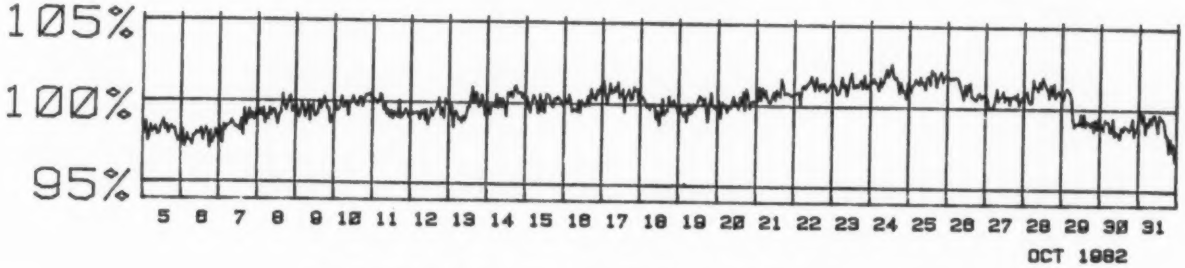
Day	THULE Average (cts/h)/100	ALERT Average (cts/h)/100	DEEP RIVER Average (cts/h)/300	KIEL Average (cts/h)/100	CLIMAX Average (cts/h)/100	TOKYO Average (cts/h)/100	HUANCAYO Average (cts/h)/100)
1	3768	6097.1	5796.4	5266.3	Data not available at time of publication.	3416.8	Data not available at time of publication.
2	3770	6103.7	5825.3	5270.1		3420.5	
3	3765	6093.2	5801.3	5282.0		3420.6	
4	3776	6105.2	5800.2	5271.8		3426.4	
5	3775	6113.3	5794.3	5263.7		3415.5	
6	3761	6096.0	5794.1	5278.0		3415.0	
7	3795	6149.6	5824.3	5323.3		3432.7	
8	3825	6192.7	5834.7	5317.5		3428.2	
9	3827	6209.8	5876.8	5317.6		3436.0	
10	3847	6247.3	5928.8	5351.9		3445.3	
11	3831	6227.6	5915.3	5362.2		3435.8	
12	3826	6213.2	5897.2	5350.9		3435.2	
13	3834	6236.3	5899.4	5354.0		3436.4	
14	3856	6266.1	5928.6	5385.2		3448.7	
15	3851	6263.2	5933.4	5377.1		3445.8	
16	3856	6261.3	5959.0	5381.6		3459.9	
17	3873	6293.3	5977.3	5390.1		3466.7	
18	3842	6246.1	5917.2	5345.6		3459.0	
19	3844	6248.6	5913.6	5350.4		3450.8	
20	3853	6260.8	5929.2	5352.2		3462.2	
21	3875	6288.8	5963.2	5381.3		3472.8	
22	3894	6318.2	6000.9	5414.2		3481.7	
23	3900	6339.6	6021.2	5425.6		3485.0	
24	3909	6346.2	6033.3	5429.5		3496.8	
25	3914	6355.2	6032.6	5463.0		3506.0	
26	3893	6320.6	5977.9	5392.9		3504.2	
27	3869	6285.3	5957.1	5376.0		3485.8	
28	3891	6320.3	5965.2	5401.9		3475.8	
29	3833	6209.3	5883.9	5337.0		3469.5	
30	3805	6148.8	5862.8	5314.6		3456.9	
31	3802	6142.5	5834.9	5285.2		3438.3	
Mean	3837	6225.8	5906.1	5348.8		3452.6	

For less than 24-hour coverage, parentheses enclose the number of hours for which data are available. For Climax and Huancayo, parentheses enclose the number of section hours whenever the sum of both sections falls below 40 hours.

THULE NEUTRON MONITOR



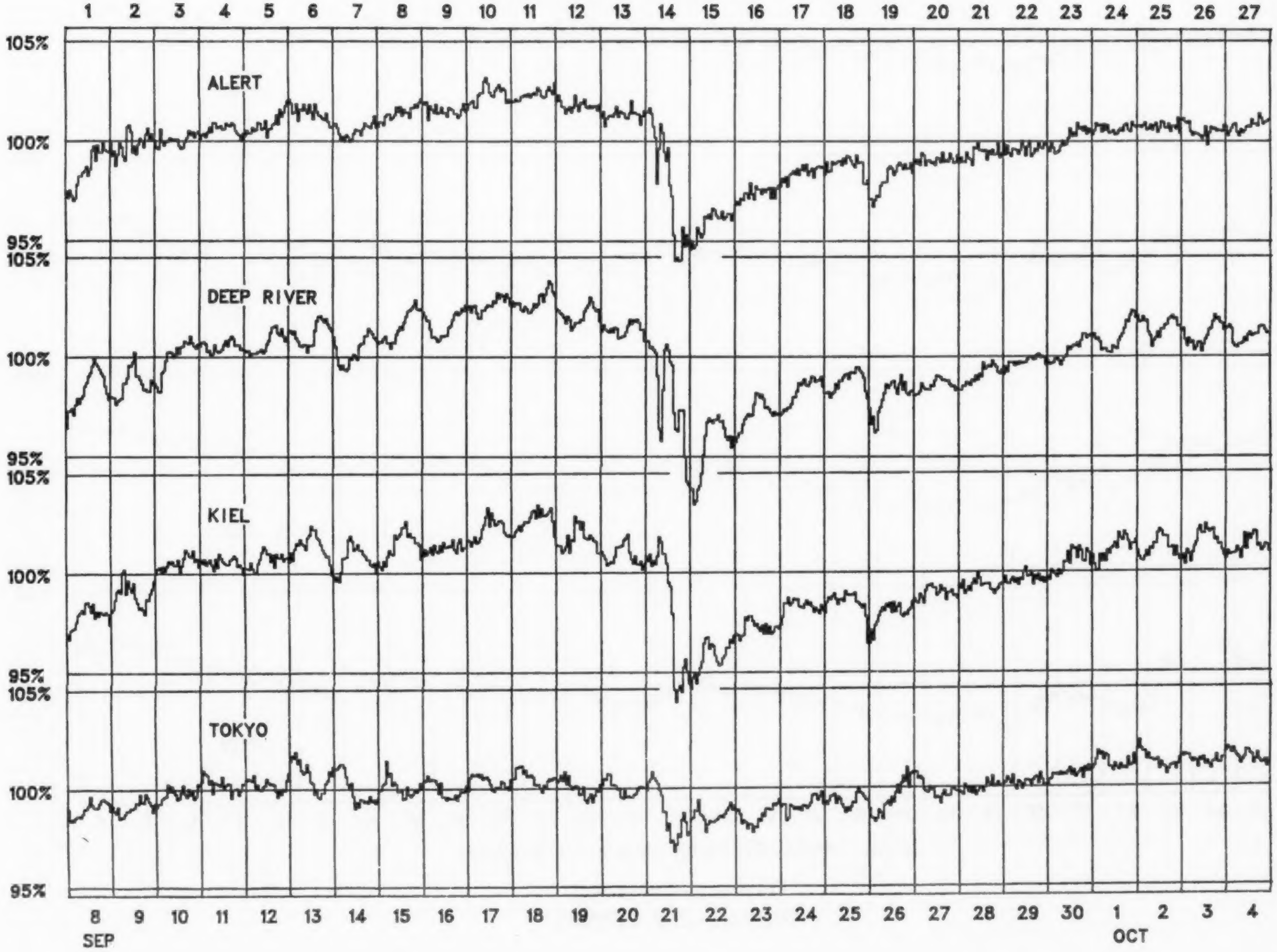
BARTELS ROTATION 2038



BARTELS ROTATION 2039

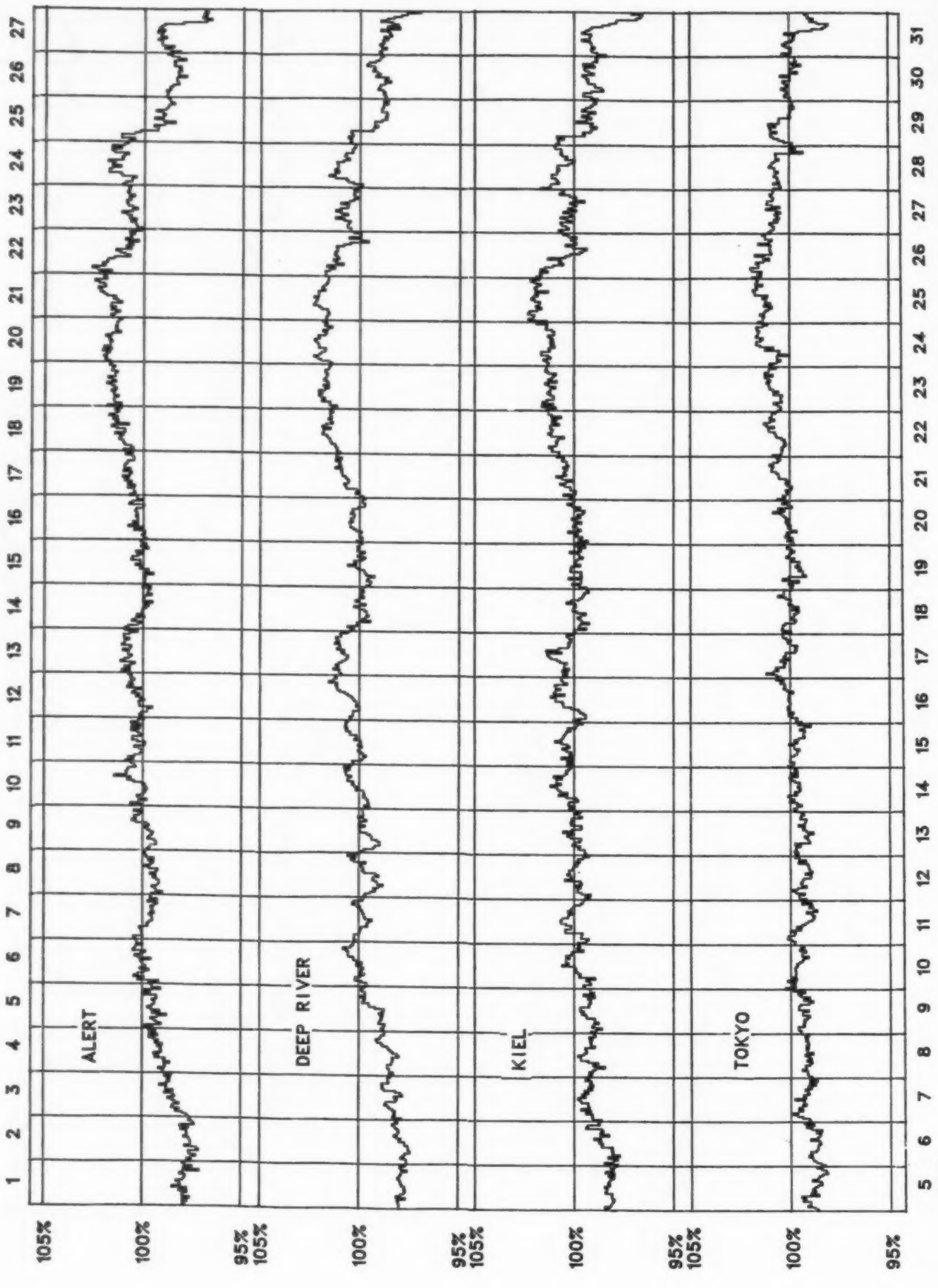
COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2038 (September 1982–October 1982)



COSMIC RAY INDICES
(Neutron Monitor)

Bartels Rotation 2039 (October 1982)



GEOMAGNETIC ACTIVITY INDICES

OCTOBER 1982

Day		K_p Three-Hourly Indices									A_p	C_p	K_m Three-Hourly Indices								A_m	aa				
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M		
1		2	3	3	3	3+	4+	5-	6	29+	28	1.2	1+	2+	3-	3-	3-	4	4+	4+	36	38	36	21	53	
2		5	4-	4	4	4+	3	3	2+	29+	24	1.2	4-	3-	3+	4-	4-	3	3-	2+	36	33	28	32	29	
3	Q7A	3	3-	3	2-	1+	1+	2-	3-	17+	10	0.5	2+	2-	2	2	2-	2	2	2+	15	20	12	16	16	
4	Q9A	2-	3-	4-	3	3-	2	2-	1	18+	10	0.6	1+	2+	3	3	3-	2	2-	1-	18	11	22	19	14	
5	Q6A	3	4-	2+	2+	1	1-	1+	2-	15	9	0.5	2+	3	2+	1+	1	1-	2	2-	14	20	14	23	12	
6		3	3+	3	3	3+	3	4+	4	27	19	1.0	2+	2+	3-	3	3	3+	4	4-	33	32	27	21	39	
7	D2	5+	6-	5+	4	4	4+	2+	2	33	35	1.4	4+	4-	4	4-	4-	4-	2	2	43	50	34	53	31	
8		4-	4+	4-	2+	3	3+	4	4-	28	21	1.1	3+	4-	3	3-	3-	3+	3+	3	33	41	25	30	36	
9	Q3	2-	2-	1	1	1-	2-	1-	3-	11	6	0.2	1+	1	0	1-	1-	2-	1-	3-	8	15	5	7	14	K
10		3+	2	1+	4-	3-	3-	3	4+	23	15	0.9	3-	2-	1+	3+	2+	3-	3-	4-	23	29	18	23	25	
11		3+	3-	3-	3-	3	2	4-	3-	23-	14	0.8	3-	3-	3	2+	3-	2	3+	3-	25	29	25	26	29	
12		3-	2+	2+	3	2-	2+	4+	4	23-	15	0.8	2+	2	2+	3	1+	2+	4-	3+	24	32	24	20	37	
13	D4	4-	4+	3-	3	3+	6-	4	6	33-	34	1.3	4-	4-	2+	3-	3+	5-	4-	5	47	50	42	30	62	
14	D5	6-	5	4+	4	4	3+	3	2+	32-	30	1.3	5-	4+	4-	4	4	3	3-	3-	46	42	46	53	35	
15	Q4A	2	2+	2-	2+	3-	1+	3-	2-	17-	8	0.4	1+	2	2-	3-	2+	1+	3-	2	15	19	15	14	21	
16		2	2	3-	3-	3+	4-	3	4-	23	14	0.8	2-	2-	3-	2+	3+	3+	3	4-	28	24	29	15	38	
17		4	4+	3	4-	3+	3-	3+	4	28+	21	1.1	4-	4-	2+	3	3+	3-	3+	4-	33	35	28	33	31	
18		4	4	4-	3+	4	4+	3+	3	30-	23	1.1	3+	3+	3	3	4	4	3	3-	36	45	37	38	44	
19		3	3-	3+	2	3	3	4-	4+	25	17	0.9	3-	2	3-	2-	3-	3-	3+	4-	26	32	22	19	36	
20		4-	3+	4	3+	3	2	1	1+	22-	14	0.8	3	3	3+	3-	3	2	1+	2-	23	26	17	28	15	
21	Q0A	3	3-	3-	2-	1+	3-	3+	2-	19	11	0.6	3-	2+	2	1+	1+	3-	3	2	18	19	17	16	21	
22	Q5A	4-	3	1	0+	2-	1+	1	1	13	8	0.4	3-	2	1-	1-	2-	1+	1-	1	10	19	6	17	9	K
23	Q2	0+	1-	2-	1+	2-	2-	2+	1+	11	5	0.2	1-	1-	1+	1+	2+	2+	2	1+	10	12	11	8	16	CC
24	Q1	1-	1	1-	1+	1	2	2	1	10-	5	0.2	1-	1-	0+	2-	1	2+	2-	1+	9	8	10	6	12	CK
25		2-	4	3	2	4-	3-	3	3+	23+	15	0.9	1+	3	3-	2+	4-	3-	3	3+	26	27	24	17	34	
26		5+	5-	4+	5+	4	4-	2-	2-	31-	30	1.3	5	5-	4	5-	3	3+	2-	1+	49	45	49	72	23	
27		2	3-	3+	4-	3+	3+	3+	3+	25	16	0.9	1+	3-	3-	3	4-	3+	3	3	27	34	29	24	39	
28	Q8A	2	1	2	3	3-	1+	3	3+	18+	10	0.6	2-	1	2-	3	3-	2-	3+	3	21	20	26	16	30	
29	D1	4-	5+	5+	4+	5-	4	3+	4+	35	35	1.4	4-	5	4	4+	5	4	3	4-	62	45	49	48	46	
30		4+	4	4	4-	4	4+	4-	4	32	27	1.2	4-	4-	3+	4	4	4	3+	3+	46	45	36	38	43	
31	D3	4-	4+	3+	1-	4+	4	6+	5	32-	34	1.4	3	3+	3-	1-	4-	4-	6-	5-	49	64	31	23	73	
Mean											18	.87									28.7	31.1	25.7	28.5		

Day	K_n Three-Hourly Indices								A_n	K_s Three-Hourly Indices								A_s
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	
1	2-	3-	3-	3-	3-	4	4+	4+	Data not available at time of publication.	1+	2	3-	3-	3-	4	4+	4+	Data not available at time of publication.
2	4	3-	4-	4	4	3+	3	3-		4-	3-	3+	4-	4-	3-	2+	2	
3	3-	2	2	2	2-	2	2+	2+		2+	2-	2	2-	2-	2-	2-	2	
4	1	2+	3	3	3	2+	2	1-		1+	2+	3	3	2+	2-	1+	1	
5	2+	3	2+	2-	1	1-	2-	2		2+	3	2+	1+	1+	1-	2	1+	
6	3-	3-	2+	3-	3	3+	4	4-		2	2+	3	3	3	3+	4	4-	
7	4+	4	4+	4	4	4-	2+	2		4+	3	4-	3+	4-	4-	2-	2+	
8	3+	4-	3	3-	3	3+	4-	3+		3+	4-	3-	2+	3-	3+	3+	3	
9	1+	1+	0+	1-	1	2-	1	3-		1+	1	0	1-	0+	2-	1-	2	
10	3	2-	1+	3+	2+	3-	2+	4-		3-	2-	2-	3	2	2	3-	3+	
11	3	2+	3-	3-	3	2+	3+	3-		2+	3	3	2+	3-	2-	3+	3-	
12	2+	2	2+	3-	1+	3-	4-	3+		2+	2+	2	3	1+	2+	4-	3+	
13	3+	4-	2+	3-	4-	5-	3+	5		4-	4-	2+	3-	3	5-	4-	5	
14	5-	4+	4-	4	4+	3+	3-	3-		5-	4	4-	4	4	3-	2+	3-	
15	1+	2-	2	3-	2+	1+	3-	2		1+	2	1+	3-	2	1+	3-	2	
16	2-	2-	3-	2+	3	4-	3	4-		2-	2	3-	2+	3+	3	3	4-	
17	4-	4-	3-	3	4-	3	3	3+		3+	3+	2	3	3	2	3+	4-	
18	3+	4-	3	3	4+	4	3	3-		3	3	3	3	3+	4-	3	3	
19	3-	2-	3	2-	3-	3-	3+	4-		3-	2	2+	1+	3-	3-	4-	4	
20	3	3	4-	3-	3	2+	1+	2-		3	3	3	3-	3	2-	1	1+	
21	3-	2+	2+	2-	1+	3-	3	2		3-	2	2	1+	1	3	3	2	
22	3-	2+	1-	1-	2-	1+	1	1		3-	2	1	1-	1+	1+	0+	1	
23	0+	0+	2-	1+	2+	2+	2+	1		1-	1	1+	1	2	2	2-	1+	
24	1-	1-	0+	2-	1+	2+	2	1+		1-	1-	1-	2	1	2	2-	1+	
25	1+	3+	3-	2+	4-	3-	3	3		1+	3	3-	2+	3+	3-	3-	3+	
26	5	4+	4-	5-	3+	3+	2	1+		5	5-	4	5-	3	3+	2-	1+	
27	1+	2+	3-	3	4-	3+	3	3		1+	3	3-	3	4-	3+	3	3	
28	2-	1	2-	3+	3-	2	3	3		2	1-	1+	3	2+	1+	4-	3	
29	3+	5+	4	4+	5+	4+	3	4		4	5-	4	5-	4+	4	3	3+	
30	4-	4	3+	5-	4+	4+	4-	4-		4	3	3+	3+	4-	4-	3-	3	
31	3	3+	3	0+	4	4-	6	5-		3-	3	3-	1-	3+	4-	5+	4	
Mean																		

The Geophysikalisches Institut, University of Goettingen, prepares the quiet (Q) and disturbed (D) days, geomagnetic planetary 3-hour-range indices (Kp), magnetic character figures (Cp) and average amplitude (Ap). The 10 most quiet days [Q1-Q0(10)] and the five most disturbed days (D1-D5) are ordered from most quiet and from most disturbed, respectively. A or K means "not really quiet" (A implies Ap>6 and K implies Ap<6 with either one Kp>30 or two Kp values >3-). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic 3-hour indices Km, Kn, Ks and daily mean values Am, An, As and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices, daily north (N) and south (S) values and half-daily antipodal mean (M) values are given. C indicates really quiet 24- and 48-hour intervals centered on 1200 UT; K indicates similar periods with some slightly disturbed 3-hour intervals.

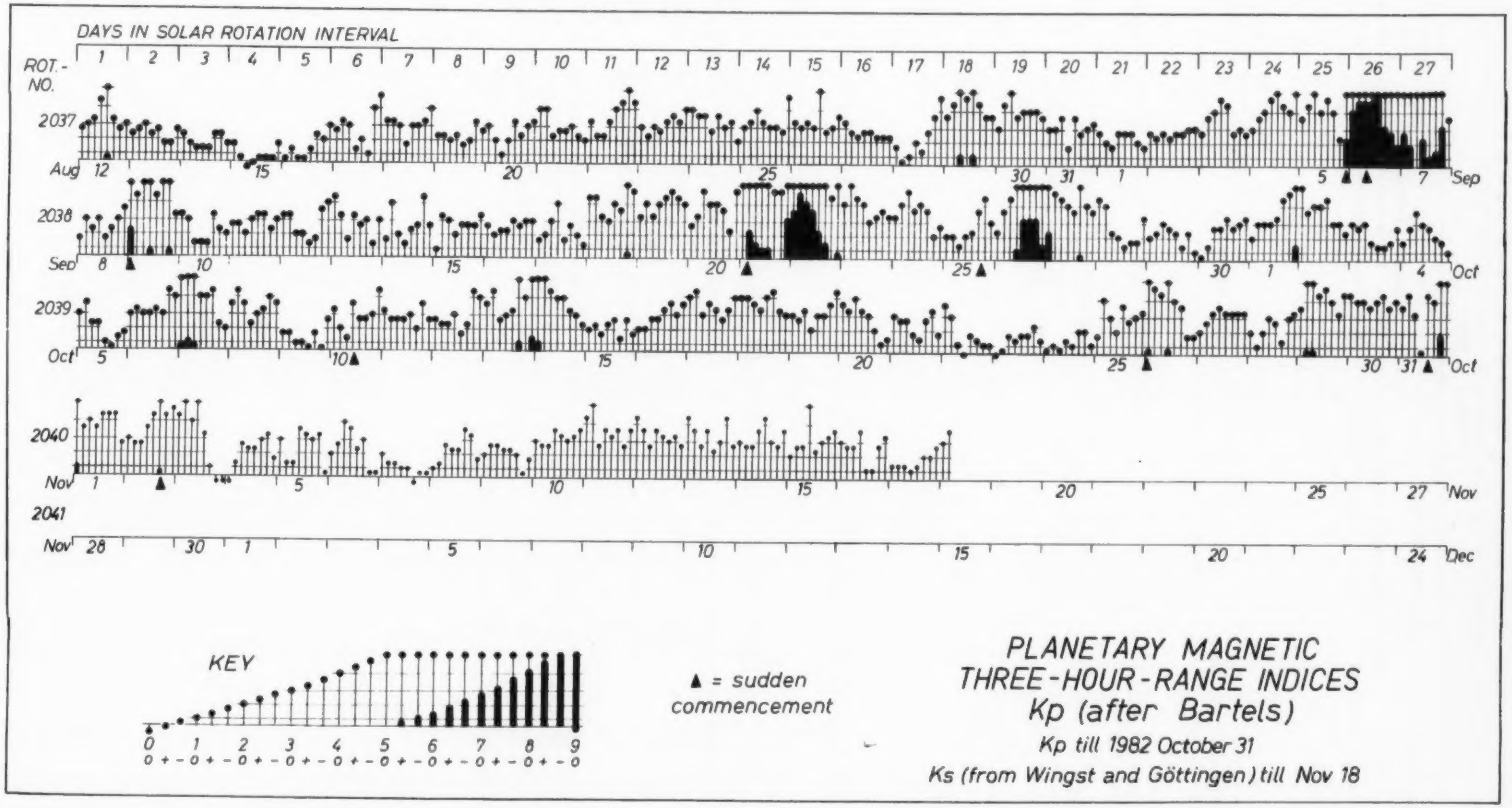
NOTE: All aa indices are provisional from 1 January 1981 until further notice, because of the change in the Southern Hemisphere observatory.

ERRATA: Kp data on 20 May 1982 should read "2+ 2+ 2+ 3- 2o 2+ 1+ 2-" instead of "2+ 2+ 2+ 3o - 2+ 1+ 2-". (SGD 455 Part 1, page 153, July 1982 issue)

DAILY AVERAGE INDICES Ap

DAY	1981 NOV	DEC	1982 JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT
1	7	6	9	41	68	20	22	20	18	12	9	28
2	5	9	9	60	107	42	30	18	10	55	12	24
3	8	8	20	35	13	48	45	9	6	26	21	10
4	6	10	12	49	12	22	19	7	2	15	32	10
5	11	9	4	37	16	21	14	6	4	18	39	9
6	9	4	10	39	3	18	6	14	15	25	199	19
7	19	3	12	26	3	5	4	14	21	107	88	35
8	27	15	9	18	11	12	5	9	15	6	12	21
9	4	10	4	15	20	10	8	16	10	23	50	6
10	13	9	4	35	16	61	5	51	10	27	10	15
11	31	6	5	45	10	47	9	32	36	28	13	14
12	39	23	2	41	8	15	6	59	48	22	14	15
13	5	12	4	54	13	11	6	62	144	10	15	34
14	27	6	3	42	11	6	8	24	153	7	14	30
15	20	6	12	18	7	10	20	26	36	3	12	8
16	17	4	17	6	4	11	10	10	50	6	12	14
17	32	7	10	30	14	19	12	6	24	16	11	21
18	26	14	13	34	20	12	20	7	24	16	30	23
19	14	10	3	36	10	8	12	24	28	10	28	17
20	13	6	6	26	12	20	8	18	24	12	24	14
21	15	6	14	21	23	32	8	9	11	15	76	11
22	11	3	27	51	38	18	4	20	16	24	135	8
23	20	6	22	29	8	9	2	20	12	17	26	5
24	9	10	21	24	12	15	4	21	50	18	22	5
25	27	8	9	42	20	52	8	17	22	20	13	15
26	9	6	7	43	11	7	24	16	27	20	84	30
27	4	6	13	12	9	24	54	32	27	11	42	16
28	6	12	17	10	6	21	56	27	21	12	14	10
29	4	32	11		13	31	35	19	22	38	9	35
30	1	30	27		15	30	35	39	23	28	12	27
31		18	34		20		31		25	16		34
MEAN	15	10	12	33	18	22	17	22	30	21	36	18

GEOMAGNETIC ACTIVITY INDICES



PLANETARY MAGNETIC
THREE-HOUR-RANGE INDICES
Kp (after Bartels)
Kp till 1982 October 31
Ks (from Wingst and Göttingen) till Nov 18

PRINCIPAL MAGNETIC STORMS

OCTOBER 1982

		Commencement			SC Amplitudes					Ranges			End	
Sta	Geomag Lat	Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	D (Min)	H (Gamma)	Z (Gamma)	Day	Hour (UT)
HYB	07.6N	C1	0900	..	..	..	..	01(7)	5	7	127	47	02	22
HUA	00.6S	01	1200	..	..	..	..	01(6,7)	6	6	390	49	02	02
HER	33.7S	01	14--	..	..	..	..	01(6)	5	20	67	84	02	03
COL	64.6N	06	01--	..	..	..	..	07(6)	7	172	1390	780	08	22
FRD	49.6N	06	18--	..	..	..	..	07(1,3)	5	18	114	60	09	--
HYB	07.6N	06	0200	..	..	..	..	06(5,6,7) 07(5)	5	5	153	34	08	22
HER	33.7S	06	15--	..	..	..	..	06(7,8)	5	19	97	89	07	18
SIT	60.0N	07	00--	..	..	..	..	07(3)	7	--	770	500	07	19
GUA	04.0N	07	0007	..	..	..	..	07(5)	5	--	180	40	07	16
HUA	00.6S	07	0557	SC	--	10	5	07(5)	6	9	263	52	07	23
HYB	07.6N	10	0500	..	..	..	..	11(2) 12(7)	4	6	109	33	12	22
FRD	49.6N	12	----	..	..	..	..	13(8) 14(1,2)	5	25	105	70	--	--
COL	64.6N	13	06--	..	..	..	..	14(3)	7	231	1350	910	14	22
SIT	60.0N	13	09--	..	..	..	..	14(4)	7	--	--	580	14	16
WIT	54.2N	13	1400	..	..	..	..	13(6,8)	6	31	195	95	14	06
HYB	07.6N	13	0200	..	..	..	..	13(6)	6	5	125	30	14	23
HER	33.7S	13	14--	..	..	..	..	13(6,7,8) 14(1)	5	21	89	92	14	04
KGL	56.5S	13	1330	..	..	..	..	13(8)	8	77	722	356	14	11
HYB	07.6N	16	0300	..	..	..	..	18(6)	5	5	144	17	18	20
HUA	00.6S	16	0850	..	..	..	..	16(5,6)	6	8	306	34	16	23
COL	64.6N	25	04--	..	..	..	..	26(1)	6	178	980	810	26	14
HYB	07.6N	25	0500	..	..	..	..	25(5,6,7)	4	4	144	27	25	24
FRD	49.6N	26	0030	SC	- 2	80	- 12	26(1)	6	21	166	54	30	--
HON	21.1N	26	0030	SC	--	47	16	26(1,2)	5	09	130	32	26	19
JAI	17.3N	26	0028	SC	- 1.8	44	- 9		-	5	96	41	26	19
SHL	14.7N	26	0028	SC	0.9	60	9		-	5	136	40	26	19
UJJ	13.5N	26	0028	SC	- 1.5	51	- 11		-	5	101	37	26	19
ABG	09.5N	26	0028	SC	- 1.7	44	- 15	26(1,2,4)	5	3	106	39	26	19
HYB	07.6N	26	0030	SC	- 1.2*	39	- 2	26(1,2)	5	5	121	28	27	22
GUA	04.0N	26	0029	SC*	--	137	- 38	26(1)	7	--	230	50	26	19
HUA	00.6S	26	0028	SC	4	64	10	26(5,6)	6	8	358	61	26	20
TRD	01.1S	26	0028	SC	- 1.2	41	40		-	2	200	118	26	19
PMG	18.6S	26	0029	SC	.6	84	76	26(1)	6	7	180	140	26	21
HER	33.7S	26	0030	SC*	7	42	35	26(1,4)	5	19	97	61	26	14
GNA	43.2S	26	0029	SC*	- 19.2*	19 *	-134 *	26(0,1)	6	29	100	140	26	17
KGL	56.5S	26	0029	SC	12	37	23	26(2,4)	5	36	149	86	26	18
JAI	17.3N	28	1900	..	..	..	..		-	5	164	46	29	23
SHL	14.7N	28	1900	..	..	..	..		-	5	230	40	29	23
UJJ	13.5N	28	1900	..	..	..	..		-	4	161	41	29	23
ABG	09.5N	28	1900	..	..	..	..	29(2)	6	5	174	38	29	23
HYB	07.6N	28	1900	..	..	..	..	29(2)	6	4	185	34	30	23
GUA	04.0N	28	1845	..	..	..	..	29(2)	6	10	260	30	29	13
TRD	01.1S	28	1900	..	..	..	..		-	4	300	137	29	23
PMG	18.6S	28	19--	..	..	..	..	29(2)	6	12	230	90	30	21
HER	33.7S	28	18--	..	..	..	..	29(1)	5	22	173	69	30	05
COL	64.6N	29	04--	..	..	..	..	30(4)	7	274	1430	720	30	21
SIT	60.0N	29	04--	..	..	..	..	29(5)	7	--	--	490	30	20
GUA	04.0N	29	1306	..	..	..	..	29(5)	5	--	120	30	30	07
HUA	00.6S	29	0226	SC	2	58	- 8	29(6)	6	9	195	42	30	20
COL	64.6N	31	12--	..	..	..	..	31(7) 01(5) 02(5) 03(3)	7	294	1780	910	03	14
WIT	54.2N	31	1338	SC*	- 5 *	58 *	0	31(7)	6	39	150	75	01	03
FRD	49.6N	31	1338	SC*	- 6	22	3	31(7) 01(1)	6	33	142	60	03	--
HON	21.1N	31	13--	SC	--	8	0.5	31(7)	5	07	104	34	03	14
JAI	17.3N	31	1339	SC	- 0.9	29	- 7		-	4	108	41	01	23
SHL	14.7N	31	1339	SC	- 0.2	33	6		-	--	--	--	01	23
UJJ	13.5N	31	1339	SC	- 0.5	32	- 7		-	--	--	--	01	23
ABG	09.5N	31	1339	SC	- 0.8	25	- 7	31(7)	5	4	108	27	01	23
HYB	07.6N	31	1337	SC	- 0.3	28	- 2	31(7) 01(7)	5	3	117	14	01	23
GUA	04.0N	31	1338	SC*	--	7	- 2	31(7)	5	--	110	30	01	05

PRINCIPAL MAGNETIC STORMS

OCTOBER 1982

	Geomag	Commencement			SC Amplitudes				Ranges				End	
Sta	Lat	Day	Time (UT)	Type	D (Min)	H (Gamma)	Z (Gamma)	Maximum 3-Hour K Index Day(3-Hour Periods)	K	D (Min)	H (Gamma)	Z (Gamma)	Day	Hour (UT)
HUA	00.6S	31	1338	SC*	3	106	8	31(6,7)	7	11	359	51	01	03
TRD	01.1S	31	1339	SC	--	--	--		-	--	--	--	01	23
PMG	18.6S	31	1338	SC	.2	23	19	31(7)	5	7	110	50	02	00
HER	33.7S	31	1338	SC*	4	23	19	31(7)	5	26	7	133	01	04
GNA	43.2S	31	1338	SC*	2.4*	28 *	18 *	31(7) 01(1,6)	5	18	120	70	03	14
KGL	56.5S	31	1338	SC	8	64	22	01(1)	7	99	603	310	02	04

REPORTS WERE RECEIVED FROM THE FOLLOWING OBSERVATORIES:

ALIBAG COLLEGE FREDERICKSBURG GNANGARA GUAM HERMANUS HONOLULU HUANCAYO HYDERABAD
JAIPUR KERGUELEN PORT MORESBY SHILLONG SITKA TRIVANDRUM UJJAIN WITTEVEEN

SUDDEN COMMENCEMENTS AND SOLAR FLARE EFFECTS

OCTOBER 1982

PRELIMINARY REPORT ON RAPID VARIATIONS

Sudden Commencements (ssc)

26 00 29 A: SOD WNG WIT CLF AQU EBR COI TOL HUA MPO DUM; B: DOB NGK HAD FRD LNP GNA AMS CZT KGL; C: VAL

31 13 38 A: SOD DOB NUR WNG WIT HAD AQU COI TOL HUA MPO; B: NGK VAL CLF EBR FRD GNA AMS CZT KGL DUM; C: LNP

Solar Flare Effects (sfe)

11 11 36 - 12 30 NGK EBR

11 14 27 - 15 54 TOL HUA?

23 10 20 - 10 27 MPO

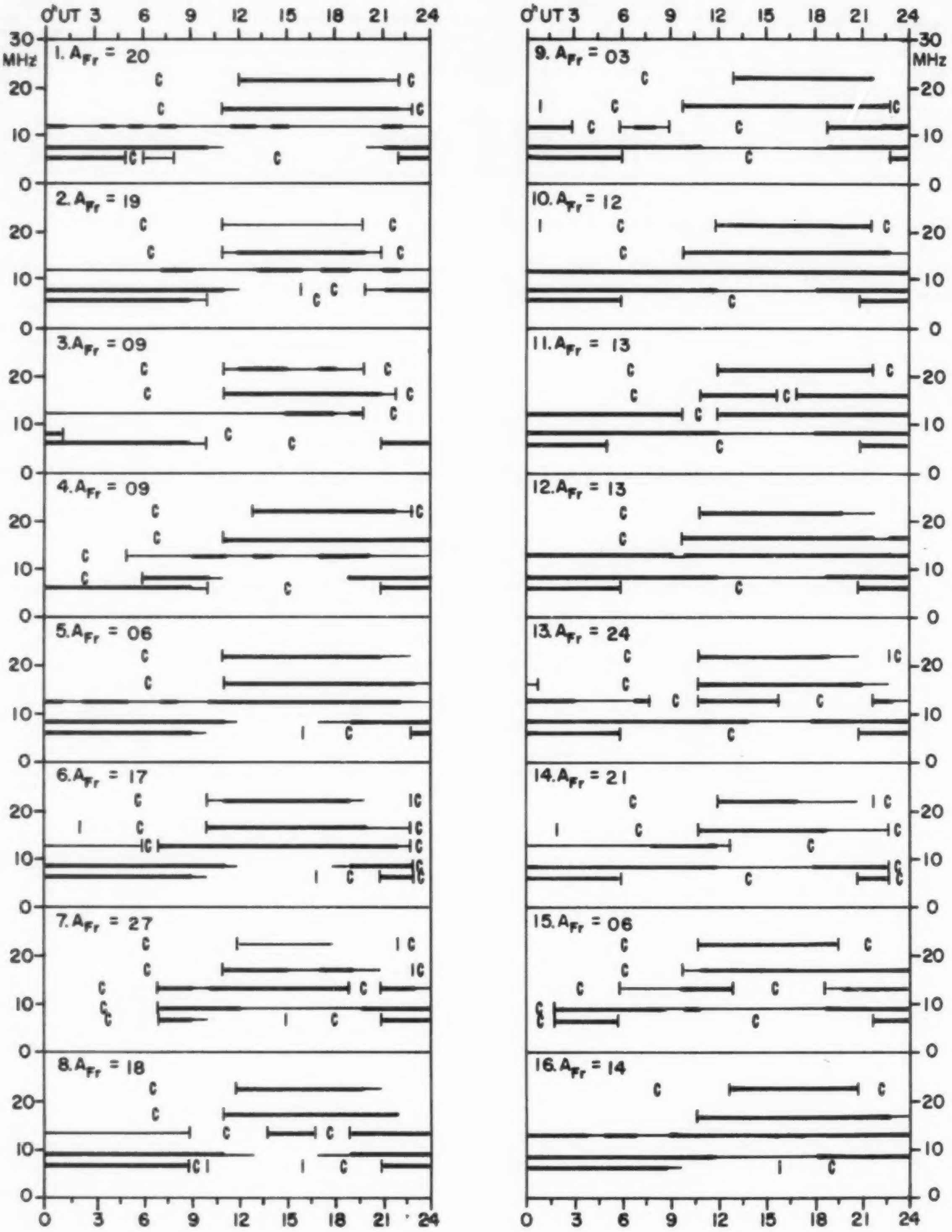
24 14 59 - 15 10 AQU EBR

26 16 53 - 17 09 MPO HUA?

27 04 04 - 04 20 LNP

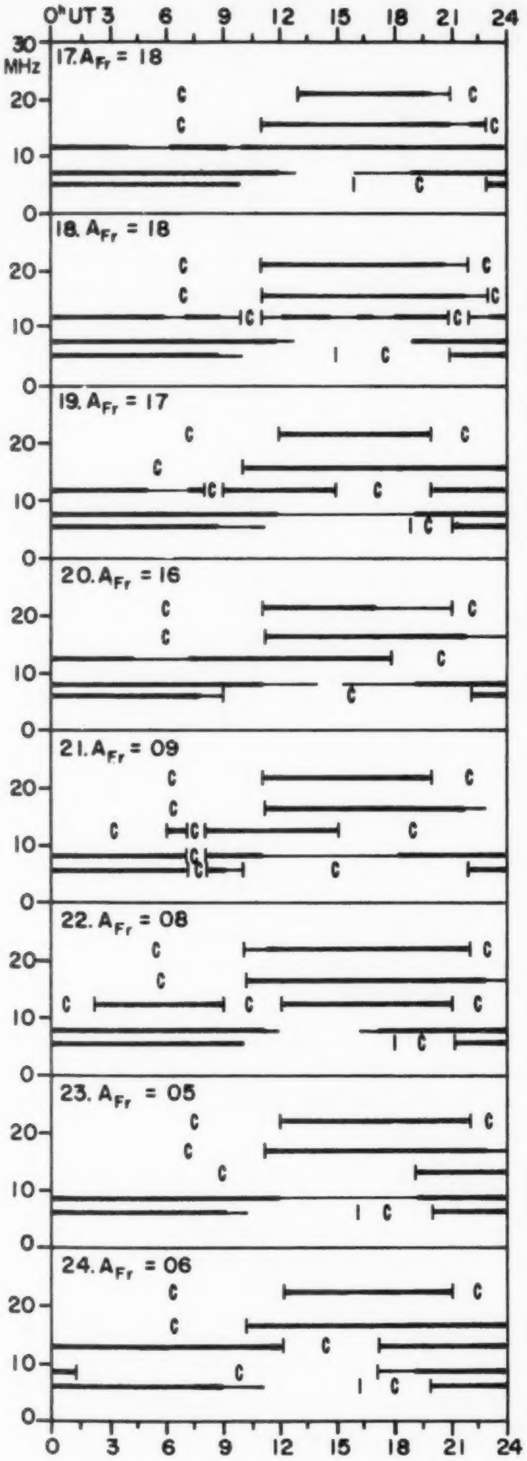
TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

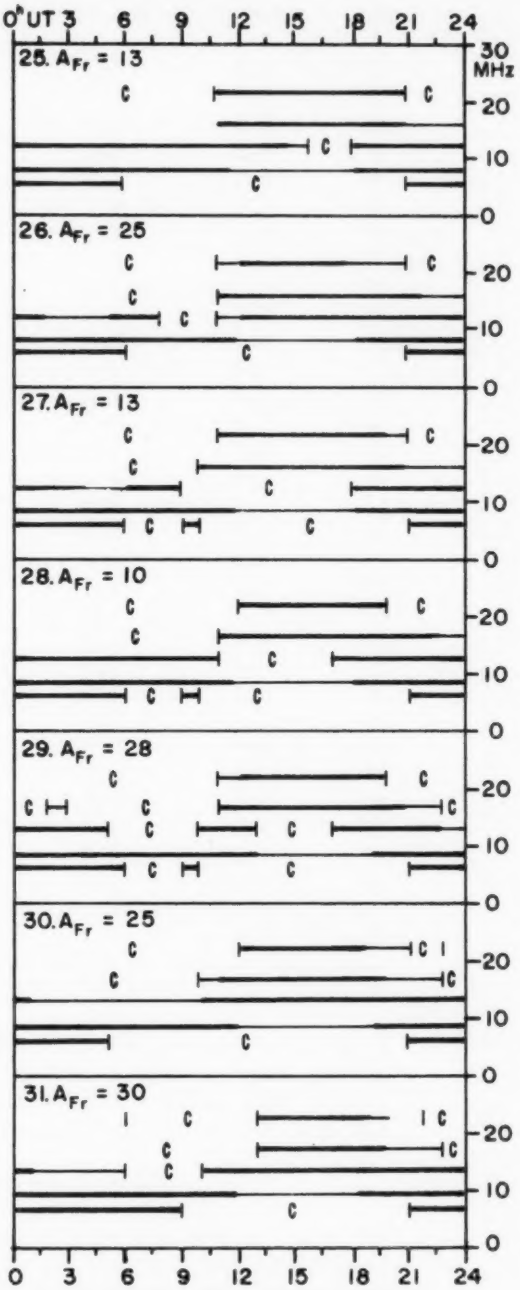
OCTOBER 1982



TRANSMISSION FREQUENCY RANGES -- NORTH ATLANTIC PATH

OCTOBER 1982





Field strengths from five frequencies, 6.4, 8.6, 13.0, 17.0 and 22.5 MHz, observed on a Lüchow New York circuit are represented above. Heavy solid lines represent field strengths ≥ -12 dB above 1μv/m (transmitter power reduced to 1 kW). Observed field strengths between -12 dB above 1 μv/m and -40 dB above 1 μv/m are represented by the fine line.

RADIO PROPAGATION QUALITY INDICES

October 1982

DAY	TOKYO	NEW YORK	TEHERAN	OSLO	BRACKNELL
1	5.9	5.2	3.2	5.0	6.2
2	5.9	3.9	3.9	3.4	3.8
3	6.5	4.3	4.9	5.8	5.9
4	5.8	6.2	3.9	4.4	5.5
5	6.7	8.0	3.9	7.1	6.5
6	7.1	6.5	4.5	6.0	6.1
7	5.0	4.5	4.8	4.2	3.3
8	5.3	6.9	6.3	6.7	6.0
9	8.3	8.2	6.6	6.0	8.0
10	9.0	9.4	6.5	7.3	9.2
11	8.5	8.5	6.6	8.1	9.3
12	8.4	8.8	6.6	7.6	8.9
13	6.3	7.3	7.3	5.2	5.4
14	3.9	5.8	3.5	2.3	2.3
15	5.7	7.0	6.9	6.1	7.0
16	7.0	8.0	7.7	7.0	7.2
17	7.2	7.9	7.5	8.0	9.4
18	7.6	6.8	8.6	7.5	6.6
19	6.9	7.0	6.9	7.7	8.4
20	5.1	7.2	6.8	5.9	4.3
21	6.4	7.2	6.7	7.5	7.3
22	6.6	7.7	6.7	7.4	6.8
23	7.1	7.9	7.3	7.3	7.0
24	7.1	7.7	6.6	7.9	7.6
25	6.3	5.6	6.5	7.4	7.9
26	4.6	5.6	4.9	5.6	4.0
27	6.6	6.9	5.5	6.0	6.3
28	6.4	6.5	4.7	7.0	9.6
29	5.2	5.7	7.1	5.7	5.8
30	5.2	5.0	7.9	5.5	6.2
31	4.8	5.0	4.5	4.8	3.1
MEAN	6.4	6.7	6.0	6.2	6.5

CALCULATION OF QUALITY INDICES (Q)

From all 24 hourly field strength values and from all frequencies of the same circuit a median field strength value is calculated (FD). This daily value is compared with the average value (FA) of the preceeding 27 days (1 sun rotation).

$$Q = 6.0 + 20 \log(FD/FA)/3.0$$

The quality indices vary from 0.0 to 9.9 where 6.0 is normal. Conditions are "normal" (index = 6.0), if they correspond to the average of the preceeding 27 days.

Scale for Quality Indices

0.0 - 1.0 = very poor
1.1 - 3.0 = poor
3.1 - 5.0 = fair
5.1 - 7.0 - normal
7.1 - 9.0 = good
9.1 - 9.9 = very good

LATE DATA

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GEOMAGNETIC ACTIVITY INDICES

AUGUST 1982

Day		Three-Hourly Indices Kp									Ap	Cp	Three-Hourly Indices Km								Am	aa				
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M		
1	Q0A	2+	3-	2-	2	3	2+	3+	3+	21-	12	0.7	2+	2+	1+	2+	3	2+	3	3	22	25	19	17	28	
2	D2	4+	4-	3-	5	5+	6	6+	6+	40-	55	1.6	4+	3+	3-	5-	4+	4	5-	5	64	91	39	44	86	
3		4	4	4-	4	4+	4	4	3+	31+	26	1.2	4	4	4-	4-	4-	3+	3+	3+	45	42	36	34	43	
4		3-	2+	2+	3	3	3+	4	3	24-	15	0.8	3	3-	2+	3+	3	3	3	3-	27	32	25	25	33	
5		3-	3-	4+	3-	3+	4	3+	3	26	18	1.0	3-	3-	4-	3+	3-	4-	3-	3	33	33	23	28	28	
6		3+	2+	2	4+	4	3	5+	5-	29	25	1.2	3+	3-	3-	3+	3+	3-	4+	4	38	49	27	30	47	
7	D1	6	8-	7+	7-	7	8-	3+	1	47-	107	1.9	5+	7-	7-	6	6	6-	3	2	129	114	87	128	74	
8	Q2	1+	1	2-	2-	2	2	2	2-	13+	6	0.3	1+	1+	2-	2	2	2-	2-	2-	12	17	7	8	16	C
9		2	2-	4-	4	1+	4+	5	5-	27-	23	1.1	2-	2	4-	4+	2-	3	4-	4	34	36	22	25	33	
10	D5	4+	4-	5-	4-	4-	4+	4-	4-	32-	27	1.2	4+	3+	4-	4-	3	4-	3-	3+	43	42	37	38	41	
11		4-	3-	2+	4	5-	5+	5	2	30-	28	1.2	3+	2+	3-	4-	4-	5-	4	2	40	41	33	29	45	
12		3-	3	3+	4+	5+	3+	3-	3	28-	22	1.1	2+	3	4-	4+	4	3	3-	3-	37	31	31	30	32	
13	Q6A	2+	3-	3	2+	3-	2-	2-	3-	19	10	0.6	2+	3-	3-	2+	3-	1+	2	2	19	24	16	22	19	
14	Q4A	2+	2-	1+	1+	1+	2+	2+	2-	14+	7	0.3	2	2	2	2-	1+	2+	2+	1+	14	19	8	13	14	K
15	Q1	2-	1-	0	0+	1-	1-	1-	2-	6+	3	0.1	2	1-	0	0+	1	1-	1-	1+	6	9	4	6	8	CC
16	Q3K	1-	1+	1-	1-	1+	2+	2	3	12	6	0.3	1	2	2-	0+	1	2	2	3	12	16	6	4	18	KK
17		3-	3+	3	1+	2	1	4	5-	22	16	0.9	3	5-	4	2-	2-	1	3+	4	35	28	22	24	27	
18		3+	3+	3	2-	3	3	3+	4	25-	16	0.9	3+	4-	3-	1+	2+	3	3	3+	29	33	20	25	29	
19	Q5A	2+	2+	2	2+	2-	2	3+	3-	19-	10	0.5	2+	3	2+	2+	1+	2-	3	2+	19	20	13	15	18	
20	Q9A	3	2	1	2	3+	2+	3	3+	20	12	0.7	3	2	2-	2	3	3-	3-	3	22	25	17	15	28	
21		4	4	2+	3-	3-	3	2+	2	23	15	0.8	4-	3+	2+	2	2+	3-	3-	2+	25	31	27	38	21	
22		3+	2+	2+	3+	4	4+	5	4+	29	24	1.2	4-	2+	2+	3	4-	3+	4+	4-	39	46	27	24	50	
23		3	2+	3	3-	3+	4-	3+	4	25+	17	0.9	3+	2+	3	2+	3-	3+	3+	4	31	34	25	22	38	
24		4	4-	4-	3-	4-	3	3+	2	26	18	1.0	4-	4-	4-	3-	3	3	3	2	34	34	27	31	31	
25		3	3+	4	3+	3	3	3-	5-	27	20	1.0	3+	3+	4-	3+	3-	3-	3-	4	36	40	32	36	36	
26		3+	3	3+	3	5	3-	3	4-	27	20	1.0	3	3	3	3-	4+	3	3-	4-	35	38	36	29	44	
27	Q8A	3+	3-	2+	3-	3-	2+	2+	2+	21-	11	0.6	3+	2+	2	2+	3-	2+	2+	2	20	27	12	21	19	
28	Q7A	2-	1-	1	2	1+	3-	4-	5-	18-	12	0.7	1+	1	1-	2	2-	3-	3	4	19	28	19	11	35	
29	D3	4-	4+	6-	5-	6-	4+	4-	4-	36-	38	1.4	3	4-	5-	4+	5-	4-	3+	3+	52	48	47	53	43	
30	D4	3	4+	5	4-	4	4	4	4-	32-	28	1.2	3+	4	4+	4-	4-	3+	3+	3+	43	48	42	45	46	
31		3	3	4-	2-	4-	3-	3	3+	24	16	0.9	3+	3-	3+	2-	3+	3-	3-	3	29	27	20	20	28	
										Mean	21	0.91									33.6	36.5	26.0	31.4		

Day	Three-Hourly Indices Kn								An	Three-Hourly Indices Ks								As
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	
1	2+	3-	2-	3-	3	2+	3	3	22	3-	2+	1+	2+	3-	3-	3+	3	22
2	4-	3+	3-	5-	5-	5-	5-	5	65	5-	3+	3	5-	4	4-	5-	5	63
3	4-	4+	4-	4-	4-	4-	4-	3	46	4	4-	3+	4-	3+	3+	3+	4-	44
4	3	3-	2+	3	3+	3	3	3-	28	3-	3-	3-	3+	3	3	3	2+	26
5	3	3-	4+	3+	3	4-	3	3-	35	3-	3	3	3+	3-	4	2	3	30
6	3	3-	3	4-	4-	3	5-	4	41	4-	3	2+	3+	3+	2+	4-	4	35
7	5	7-	7-	7-	6	6	3	1+	141	5+	6+	7-	6-	6	5-	3	2+	118
8	2-	1	2-	2+	3-	2+	2+	2	15	1	2-	2	2-	1+	1	1	1+	9
9	2+	2	4	4+	2	4-	4-	4	40	1	2	3+	4	2-	3-	3+	4	29
10	4-	3+	4	4	3+	4-	3	3+	43	5-	3+	4-	4-	3	4-	3-	3	43
11	3+	3-	3-	4-	4	5-	4	2+	41	3+	2+	2+	3+	3+	4+	4+	2	38
12	3-	3+	4-	4+	4+	3	3-	3	41	2	3-	3	4+	4	3-	3-	3-	32
13	2+	3-	3	3-	3-	2-	2	2+	21	3-	3-	2+	2	3-	1+	2	2	18
14	2	2	2	2	2-	3-	3-	1+	16	2-	2	2	1+	1+	2	2+	1+	13
15	2-	0+	0	0+	1-	1	1	2-	6	2	1-	0	0+	1	0+	0+	1+	5
16	1	2	1	1-	1+	3-	2	3	13	1	2	2	0	0+	1+	2	3-	12
17	3-	4-	3-	2-	2	1+	3+	4-	27	3+	5	5-	2-	1	1-	4-	4+	43
18	3	3+	3-	2-	3-	3	3	3+	28	4-	4	3	1+	2	3-	3+	3+	31
19	2	2+	2+	2+	2-	2+	3	3-	20	2+	3+	2+	2	1	1	3	2-	19
20	3-	2	1+	2+	3+	3-	3-	3+	23	3+	2	2	2-	3	2+	3	3-	22
21	3+	3	2+	2+	3-	3	2+	2+	25	4+	3+	2+	2-	2	2	3-	2	26
22	3	3-	3-	3	3+	3+	4	3+	34	4+	2+	2+	3	4-	3+	5-	4	44
23	3+	2+	3	3-	3	4-	3+	3+	32	3+	2	3-	2+	3-	3	3+	4+	31
24	3+	4	4-	3-	3	3	3	2	33	4	4-	3+	3-	3+	3	3-	2	34
25	3	3+	4	3+	3	3-	3-	4	35	4-	3+	4-	3+	3-	3-	3-	4	36
26	3-	3	3+	3	4+	3	3	3+	34	4-	3+	2+	3-	4+	3	3-	4-	36
27	3	2+	2	3-	3-	3-	2+	2+	21	3+	2+	2	2	3-	2	2+	2-	20
28	2-	1	1	2	2-	3	3+	4	21	1+	1	1-	2	2-	2+	3	4	18
29	3	4	5	4+	5-	4-	3	3+	55	3	3+	5-	4	4+	3+	4-	3+	49
30	3+	4-	5-	4-	4-	3	3+	3+	45	3	4	4-	3+	3+	4-	3+	3+	41
31	3	3	4-	2-	3+	3-	3-	3	30	3+	2+	3	2	3+	3-	3-	3+	28
								Mean	34.7									32.7

ERRATA:

Conversion in 1979 to a new computer with a different word size caused values of indices aa to be truncated if they exceeded 99; the machine read and printed only the two least significant digits. Correct values of the affected indices are listed below. Both half-daily values are given, too, to make clear which of the two entries should be corrected.

Date	N	S	M	
21 Feb 1979			66	102
10 Mar			54	101
25 Apr	109		27	148
26 Apr			103	15
13 Aug			53	108
20 Aug			33	100
29 Aug			59	111
18 Sep			100	63
25 Jul 1980			13	100
19 Dec	118	123	63	178
06 Feb 1981			24	116

NOTE:

aa indices are provisional from 1 January 1981 until further notice, in connection with the change of the Southern Hemisphere observatory.

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alonc are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap≤6 but one Kp>3o or two Kp values≥3-"). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices Km, Kn, Ks, daily mean values Am, An, As (unit 1nT), and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices daily north (N) and south (S) values, and half-daily antipodal mean (M) values are given. Quiet 24-hour and 48-hour intervals centered on 1200 UT are indicated for really quiet as C and for quiet but with some slightly disturbed three-hour intervals as K. The first hundred years series of aa is in IAGA Bulletin No.33, and complementary data are in IAGA Bulletin No.39.

GEOMAGNETIC ACTIVITY INDICES

SEPTEMBER 1982

Day		Three-Hourly Indices Kp									Ap	Cp	Three-Hourly Indices Km								Am	aa			
		1	2	3	4	5	6	7	8	Sum			1	2	3	4	5	6	7	8		N	S	M	
1	Q2A	3-	2	2-	3-	3-	3-	2	2-	18	9	0.5	2+	2-	1+	2+	3-	2+	2-	2-	16	21	18	17	22
2	Q8A	3-	2+	3-	2+	3-	3-	3	3	21+	12	0.7	3-	2+	3	3	3-	2-	3-	3+	25	24	22	24	22
3		3-	4-	4	5-	4+	3-	3	3-	28-	21	1.1	3-	3	3+	4	3+	3-	2+	3-	31	32	27	30	29
4		3	4-	4	5-	5	4+	4	5	34-	32	1.3	3-	4-	4-	4+	4	4	3	4+	49	54	42	39	57
5		4-	4+	5	4	5-	4	2+	7-	35-	39	1.4	3	4+	4+	4-	4+	4-	2+	5+	55	42	50	38	54
6	D1	8	8+	8+	8+	9-	7+	7	6+	62+	199	2.1	7	8-	7	8	8+	7-	6	6-	286	214	195	201	209
7	D3	7	6+	5	7-	6-	6	7+	4-	48-	88	1.8	6	6-	4	6-	5	5+	6-	4-	107	97	71	79	89
8	Q7A	2-	3	2+	3	2-	2+	3	4-	21-	12	0.7	2+	3-	2	3-	2-	2	3-	3+	21	21	17	16	23
9		7-	4+	5	5+	4+	5	5+	3+	39+	50	1.6	6-	4	4	5-	3+	4	5-	3+	64	76	57	79	55
10	Q3A	3+	3	1+	1+	1+	3+	2+	2	18	10	0.6	3-	3-	1+	1+	1+	3-	2	2	16	22	12	15	20
11		3-	3-	2	3	3+	3+	2+	3	22+	13	0.8	3-	2+	2	3-	3	3	2+	3-	23	26	20	21	26
12		3+	3+	2	2	1+	2-	4-	4	21+	14	0.8	3-	3-	2+	2	1-	1+	3+	3+	21	28	19	24	24
13		4+	3+	2-	3+	3=	3	1+	3	23-	15	0.9	4-	2	1+	3	3-	3	1	3-	23	27	20	26	22
14		2-	4	2	1+	2+	3-	4+	3-	21	14	0.8	2	4	2+	2-	2-	2+	4	2+	25	26	22	20	29
15	Q9A	1	3+	3	2	3-	3-	3-	3+	21-	12	0.7	1-	3+	2+	2+	2	2	2+	3	20	28	16	20	25
16	Q6A	3-	2	2+	2+	3	3-	3	3	21	12	0.7	3-	2-	3-	2+	3-	2+	3	3-	22	22	17	15	25
17	Q5A	2-	2	3	4	2-	3-	2	1+	18+	11	0.6	2-	2-	3	4	1+	2	2	1+	20	18	23	28	13
18		4+	4+	3+	3	4	4-	5+	5-	33-	30	1.3	4-	3+	3	2	3+	3+	5-	4+	44	54	41	36	58
19		3+	4	3+	4	4+	5-	4+	4	32	28	1.2	3+	4-	3	4-	4-	4	4-	3+	42	40	35	29	46
20		3-	3+	5-	4	4	4-	2+	5-	29+	24	1.2	3-	3	5-	4-	3+	3	2	4	41	31	41	39	33
21	D5	5	7-	6	6-	6-	5-	5-	7+	46-	76	1.8	4	6	5+	5-	5-	4	4	6	96	88	83	79	92
22	D2	8-	8+	8	8-	7-	6	4+	5+	54	135	1.9	7-	7+	8-	7	6-	5-	4	5-	184	171	137	228	81
23		4	5	4+	4	3	3+	4-	3+	31-	26	1.2	4-	4	3+	4-	3	3+	4-	3	40	42	39	43	38
24		3+	4	5-	4-	4	4-	2	3-	28	22	1.1	3	3+	4-	3+	4	3	2	3-	35	36	31	39	28
25	Q0A	2	2	1+	2	2+	4-	4+	3	21-	13	0.7	1+	2-	1	2	3-	3	4	3-	22	29	16	10	36
26	D4	2+	4-	4+	6-	7+	7+	7+	6	44	84	1.8	2+	3+	4-	5	7-	6+	6+	6-	115	79	78	38	120
27		7-	5-	4+	4	4-	5+	4	4-	36+	42	1.5	6	4-	3+	4-	3+	4+	3+	3+	60	59	29	43	45
28		4+	4	2+	2	1+	2-	2-	3+	21-	14	0.8	4-	3+	2+	2	1	1+	2-	3	22	25	16	24	18
29	Q1A	2	2+	3	3-	2+	1+	2+	1	17	9	0.5	2	2+	3-	3-	3-	1+	2+	1	17	16	13	15	14
30	Q4A	1-	1+	3-	3-	3+	3-	3	3+	20-	12	0.7	1-	1+	3	3	3	3-	3	3+	24	19	19	13	26
Mean											36	1.09									52.2	48.9	41.0	45.1	

Day	Three-Hourly Indices Kn								An	Three-Hourly Indices Ks								As
	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8	
1	2+	2	1+	3-	3-	3-	2	2	18	3-	1+	2-	2	3-	2	2-	1+	14
2	3-	2-	3+	3-	2+	2+	3-	3	24	3	3	3	3	3-	1+	2+	4-	26
3	3-	3+	4-	4+	4-	3-	3-	3-	35	3-	3	3	4-	3	2+	2+	2+	27
4	3-	4-	4-	5-	4+	4	3	4+	50	2	4-	4-	4	4	4	3	4+	47
5	3+	4	5-	4-	5-	4-	2+	5+	57	3	4+	4+	4	4	4-	2	5	53
6	7	7+	8-	8+	9-	6	6-	5+	289	7	8-	7-	8	8+	7	6+	6-	283
7	6-	6-	4	6	5-	5	6-	3	103	6	6	4-	5	5+	5+	6-	4	111
8	2	3-	2	3-	2	3-	3-	4-	23	2+	3-	2	2	1+	2-	2+	3	18
9	6-	4	4+	5-	4-	4	5-	3	66	6-	4	4	4+	3+	4-	5-	3+	63
10	3	3-	1	2-	2-	3	2+	2	18	3-	2+	1+	1+	1+	2	2-	2	14
11	2	2+	2	3-	3	3+	3-	3-	23	3	3-	2	3-	3	3	2	3-	23
12	3-	3-	2	2-	1+	2-	3+	4-	23	2+	3-	2+	2+	0+	1-	3	3	19
13	4-	2	1+	3	3-	3+	1+	3	25	4-	2+	1+	3-	3-	3	1	3-	22
14	2-	4-	3-	2-	2+	3-	4-	2+	24	2	4+	2	2-	1-	2-	4+	2	26
15	1-	3	2+	3-	2+	2+	3-	3	22	1	3+	2+	1+	1+	2-	2	3	18
16	3	2-	2+	2+	3	3-	3+	3	24	2+	2-	3	2	2+	2-	3	2+	19
17	2-	2-	3	4	1+	2+	2+	1+	20	2-	1+	3	4+	1+	2	2	1+	20
18	4-	3+	3	2+	4-	4-	4+	4-	41	4-	4-	3	2	3	3	5+	5-	48
19	3	3+	3	3+	4-	4	4	4-	43	3+	4	3	4-	4-	4	4-	3+	42
20	2+	3	5-	4	4-	3+	2+	4	40	3	3	5-	4-	3+	3	2	4+	42
21	4	6+	6-	5	5	4	4	6	104	4-	6	5-	5-	5-	4-	4-	6+	89
22	7-	7+	8-	7	6	5-	4	4+	187	6+	7+	8-	7	6-	5-	4-	5	180
23	3+	4	3+	3+	3	3+	4-	3	38	4-	4	3+	4	3-	3+	4-	3+	43
24	3-	3+	4	3+	4	3+	2	3-	36	4-	4-	4-	3+	4-	2+	2	3	35
25	2-	2	1+	2	3-	3	4	3	24	1	2-	1	2-	2+	3	4-	3-	19
26	2	3	4-	5+	7-	7-	7-	6	122	2+	4-	4-	5	7-	6+	6-	5	108
27	6	3+	3+	4-	4-	5-	4-	3+	61	6+	4	4-	4-	3	4-	3	4-	59
28	4-	4-	3-	2-	1+	2-	2-	3+	24	4-	3	2	2+	1-	1-	2-	3	19
29	2	2+	3	3-	3-	1+	3-	1+	19	2+	2+	3-	2+	3-	1+	2-	1-	16
30	0+	1+	3+	3-	3	3-	3	3+	24	1-	1+	3-	3	3+	3-	3-	3+	24
Mean									53.6									50.9

ERRATA:

Conversion in 1979 to a new computer with a different word size caused values of indices aa to be truncated if they exceeded 99; the machine read and printed only the two least significant digits. Correct values of the affected indices are listed below. Both half-daily values are given, too, to make clear which of the two entries should be corrected.

Date	N	S	M	
21 Feb 1979			66	102
10 Mar			54	101
25 Apr	109		27	148
26 Apr			103	15
13 Aug			53	108
20 Aug			33	100
29 Aug			59	111
18 Sep			100	63
25 Jul 1980			13	100
19 Dec	118	123	63	178
06 Feb 1981			24	116

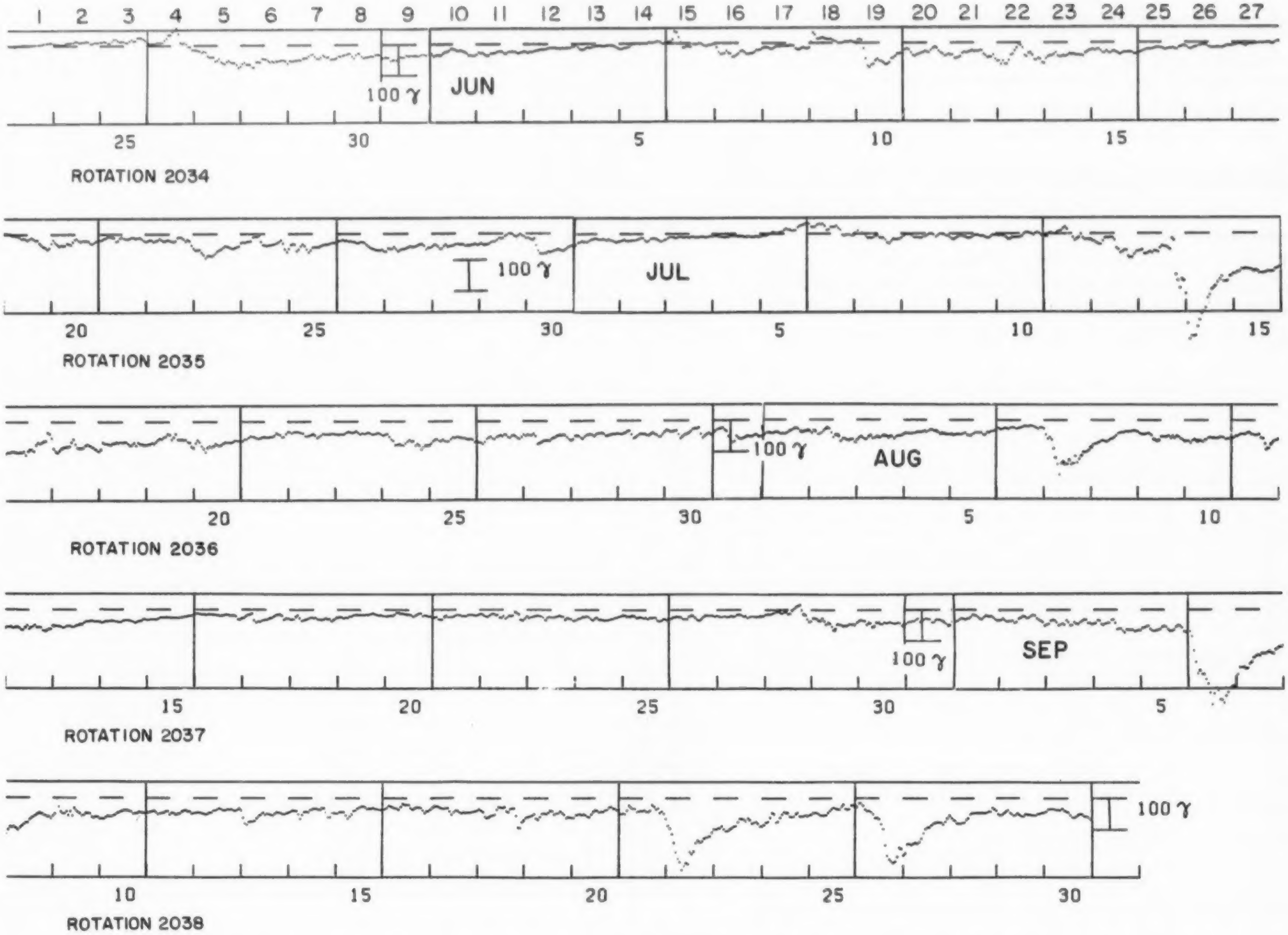
NOTE:

aa indices are provisional from 1 January 1981 until further notice, in connection with the change of the Southern Hemisphere observatory.

Quiet days (Q) and disturbed days (D), geomagnetic planetary three-hour-range indices (Kp) (integers alone are equivalent to those normally given with a small zero), magnetic character figures (Cp), and average amplitude (Ap) (unit 2 nT) prepared by Geophysikalisches Institut at the University of Göttingen, F.R. of Germany for the International Service of Geomagnetic Indices. Ten most quiet days [Q1-Q0(10)] and five most disturbed days [D1-D5] are ordered from most quiet or disturbed, respectively. A or K means "not really quiet" (A = "Ap>6", K = "Ap≤6 but one Kp>3o or two Kp values≥3-"). An asterisk means "not really disturbed" (Ap<20).

Geomagnetic three-hourly indices Km, Kn, Ks, daily mean values Am, An, As (unit 1nT), and indices aa are prepared by M. Menvielle of the Institut de Physique du Globe, Paris, France. For aa indices daily north (N) and south (S) values, and half-daily antipodal mean (M) values are given. Quiet 24-hour and 48-hour intervals centered on 1200 UT are indicated for really quiet as C and for quiet but with some slightly disturbed three-hour intervals as K. The first hundred years series of aa is in IAGA Bulletin No.33, and complementary data are in IAGA Bulletin No.39.

GEOMAGNETIC ACTIVITY INDICES
Hourly Equatorial Dst
by Bartels Rotation



Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

Note: Both the sensitivity indicator placed on the last day of the month and the zero reference level change from month to month.

HOURLY EQUATORIAL DST VALUES (PROVISIONAL)

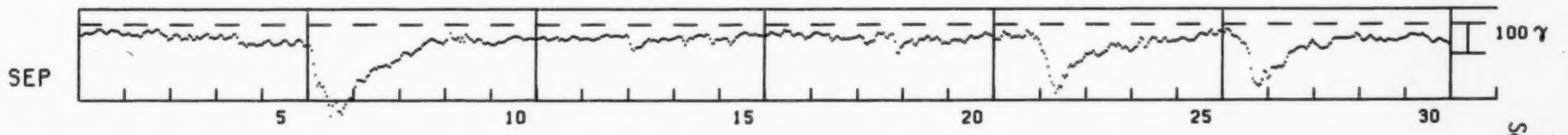
NASA/GODDARD SPACE FLIGHT CENTER

SEPTEMBER 1982

(Time-UT)

(Units-Gammas)

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-38	-35	-30	-27	-29	-32	-28	-27	-22	-15	-17	-19	-24	-29	-30	-23	-17	-19	-21	-19	-24	-30	-34	-34
2	-32	-27	-33	-37	-36	-35	-34	-41	-38	-28	-24	-19	-21	-27	-24	-19	-15	-18	-27	-32	-35	-39	-50	-46
3	-44	-34	-32	-34	-40	-49	-46	-43	-47	-33	-40	-49	-48	-39	-44	-46	-39	-35	-31	-31	-42	-41	-46	-44
4	-41	-33	-35	-45	-48	-43	-41	-41	-32	-31	-42	-62	-60	-60	-67	-73	-63	-64	-64	-63	-69	-67	-64	-66
5	-57	-56	-51	-51	-61	-67	-68	-65	-64	-61	-53	-51	-54	-62	-68	-67	-63	-54	-49	-51	-57	-69	-71	-40
6	-69	-85	-130	-167	-203	-193	-205	-205	-222	-236	-265	-303	-267	-250	-258	-286	-288	-297	-274	-263	-250	-244	-241	-223
7	-205	-184	-184	-183	-189	-166	-172	-166	-153	-148	-143	-148	-139	-139	-139	-136	-132	-138	-140	-126	-122	-117	-116	-113
8	-101	-92	-92	-91	-97	-103	-95	-89	-83	-79	-79	-69	-63	-59	-55	-50	-46	-50	-53	-57	-59	-60	-66	-57
9	-50	-2	-29	-44	-49	-50	-43	-56	-43	-57	-33	-41	-46	-50	-58	-54	-47	-47	-50	-60	-64	-59	-61	-66
10	-66	-67	-62	-57	-59	-59	-56	-52	-47	-45	-42	-40	-39	-40	-42	-44	-51	-43	-48	-45	-46	-47	-47	-47
11	-47	-44	-42	-40	-46	-52	-49	-47	-45	-42	-41	-52	-46	-48	-53	-50	-48	-43	-39	-38	-43	-43	-50	-47
12	-47	-45	-46	-48	-50	-53	-49	-46	-46	-40	-39	-35	-33	-36	-40	-39	-36	-38	-36	-39	-41	-38	-33	-40
13	-63	-80	-65	-76	-74	-75	-72	-64	-56	-52	-46	-54	-49	-50	-53	-56	-49	-44	-46	-47	-51	-50	-47	-45
14	-43	-39	-40	-41	-52	-66	-53	-44	-42	-46	-38	-36	-33	-34	-37	-38	-32	-33	-46	-62	-61	-49	-47	-43
15	-48	-44	-45	-45	-55	-66	-58	-51	-41	-39	-33	-30	-26	-27	-30	-36	-33	-34	-31	-35	-36	-37	-36	-33
16	-35	-32	-25	-27	-30	-33	-33	-38	-28	-18	-21	-21	-22	-32	-38	-32	-29	-30	-32	-39	-47	-41	-41	-36
17	-31	-26	-27	-28	-32	-35	-35	-33	-33	-44	-54	-46	-40	-41	-47	-49	-45	-48	-46	-46	-45	-43	-42	-40
18	-36	-41	-45	-60	-65	-61	-56	-55	-52	-37	-29	-30	-32	-28	-42	-45	-35	-32	-33	-57	-93	-95	-76	-70
19	-62	-60	-57	-55	-50	-65	-69	-59	-49	-47	-51	-46	-39	-42	-52	-48	-47	-41	-47	-53	-64	-60	-66	-63
20	-62	-53	-52	-50	-54	-51	-54	-58	-61	-51	-43	-38	-41	-46	-48	-44	-39	-37	-30	-27	-34	-34	-39	-47
21	-51	-47	-51	-39	-24	-30	-34	-35	-44	-42	-40	-41	-38	-44	-44	-39	-21	-27	-36	-32	-47	-42	-50	-66
22	-88	-97	-115	-142	-172	-193	-202	-228	-215	-205	-208	-170	-176	-168	-142	-134	-141	-136	-127	-124	-122	-120	-109	-96
23	-100	-96	-94	-88	-99	-106	-104	-99	-94	-90	-88	-76	-66	-65	-68	-74	-64	-70	-80	-78	-75	-81	-63	-69
24	-83	-77	-74	-61	-45	-50	-78	-74	-61	-51	-43	-45	-47	-57	-59	-57	-48	-45	-56	-58	-56	-53	-56	-53
25	-51	-45	-46	-46	-50	-55	-54	-54	-53	-45	-39	-33	-30	-33	-36	-36	-27	-20	-34	-37	-34	-23	-22	-26
26	-28	-16	-17	-24	-36	-42	-40	-45	-51	-63	-62	-67	-82	-98	-149	-182	-193	-199	-205	-199	-185	-156	-160	-160
27	-173	-145	-143	-147	-143	-140	-144	-137	-126	-110	-97	-91	-91	-85	-80	-77	-75	-76	-77	-83	-74	-63	-54	-62
28	-68	-72	-79	-81	-81	-78	-77	-68	-63	-51	-46	-47	-46	-46	-47	-46	-47	-46	-45	-42	-42	-31	-33	-40
29	-50	-55	-52	-47	-42	-38	-46	-50	-56	-53	-47	-53	-58	-57	-50	-52	-53	-54	-55	-54	-49	-48	-46	-45
30	-42	-35	-34	-34	-35	-37	-38	-38	-33	-40	-42	-45	-53	-60	-62	-57	-52	-48	-51	-57	-58	-61	-67	-61



SOME OTHER SOURCES OF DATA

Data Available: Some data available in publication form are cited here. A list is given, along with addresses of the responsible institutions. The WDC-A for Solar-Terrestrial Physics publishes the Toyokawa, Ottawa and Penticton radio data in its monthly publication, *Solar-Geophysical Data*. The WDC-A for Solar-Terrestrial Physics also receives most of the periodicals when they become available.

Belgium: *Bulletin d'Observations: Activite Solaire - Observations Radio-electriques Solaires - 600 MHz (Humain, Belgium)* Observatoire Royal de Belgique, Ave. Circulaire 3, Brussels, Belgium (monthly since 1962)

Canada: *Solar Noise Observations at 2800 Mc/s (Ottawa - ARO) and 2700 Mc/s (Penticton - DRAO)* Series C Monthly Report, National Research Council, Radio Astronomy Section Ottawa 7, Ontario, Canada (since 1947)

France: *Carte Synoptiques de la Chromosphere Solaire* Observatoire de Paris, 92 Meudon, France (monthly since 1931)

Germany: *Daily Mean Value of Solar Flux Density* Heinrich-Hertz Institut, 1199 Berlin-Adlershof, Rudower Chaussee 5, G.D.R. (monthly since Jul 1957)

Italy: *Solar Phenomena - Monthly Bulletin and Photographic Supplement* Osservatorio Astronomica di Roma, Monte Mario, Rome, Italy (monthly since 1958); *Osservazion Solari, Solar Flux and Distinctive Events* Osservatorio Astronomico Di Trieste (quarterly since 1965); *Solar Observations made at Catania Astrophysical Observatory* (annually since 1967)

Japan: *Monthly Report of Solar Radio Emission* Radio Astronomy Section, Research Institute of Atmospherics, Nagoya University, Toyokawa, Japan (since 1956); *Solar Activity Chart* WDC-C2, Toyokawa Observatory, Nagoya University, Toyokawa, Japan (annually since 1968); *IAU Quarterly Bulletin on Solar Activity* Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan (since 1978)

Netherlands: *Geomagnetic Data* IAGA Bulletin No. 12 (1932-69), No. 32 (since 1970) IUGG Publications Office, 39 ter, Rue Gay-Lussac, Paris V, France (annually)

Philippines: Manila Observatory "Solar Maps and Activity", Manila Observatory, P.O. Box 1231, Manila, Philippines (monthly)

Switzerland: Bulletin of "Berne Solar Observations", Institute of Applied Physics, Div. of Solar Observations, Sidlerstrasse 5, 3012 Berne, Switzerland (since 1968)

Taiwan: *Report on Sunspot Observations* Taiwan Provincial Weather Bureau Observatory, Taipei, Taiwan (quarterly since 1957)

USSR: СОЛНЕЧНЫЕ ДАННЫЕ *(Solar Data)* USSR Academy of Science (monthly since 1958); КОСМИЧЕСКИЕ ДАННЫЕ *(Cosmic Data)* (monthly since 1962); *Magnetic Fields of Sunspots* (bimonthly since 1964)

USA: *Preliminary Report and Forecast of Solar-Geophysical Activity* Space Environment Services Center, NOAA, Boulder, Colorado 80303 USA (weekly); *Solar-Geophysical Data* NOAA, Boulder, Colorado 80303 USA (monthly since November 1955)

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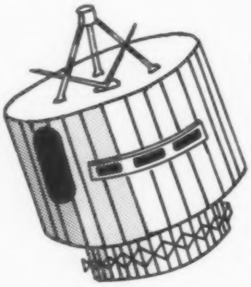
DATA ANNOUNCEMENT

SPACE ENVIRONMENT DATA
from the
SMS & GOES SATELLITES

The Space Environment Monitor instrument package on-board all SMS/GOES satellites has provided magnetometer, energetic particle, and soft X-ray data continuously since July 1974. Two SMS/GOES satellites operate simultaneously in the Earth's equatorial plane. They travel in geosynchronous orbit (6.67 Earth radii) and are generally located at 75° and 135° west longitude. This trajectory allows the detectors an unobstructed view of the Sun for all but the few dozen hours per year that the Earth eclipses the Sun. The time resolution for all three sensors is approximately 3 seconds, which permits one month's data from each sensor to be stored on a single 9-track, 1600-BPI, binary tape. Plots are available on microfilm.

MAGNETOMETER

A twin fluxgate spinning sensor allows representation of the Earth's magnetic field in three mutually perpendicular components: H_p, H_e and H_n. H_p is parallel to the satellite spin axis, which is itself perpendicular to the satellite's orbital plane. H_e lies parallel to the satellite-Earth center line and points earthward. H_n is perpendicular to both H_p and H_e, and points westward. Field strength changes as small as 0.2 gamma can be measured.



PARTICLE DETECTOR

Solid state detectors with pulse height discrimination measure protons from 0.8 to 500 MeV, alpha particles from 4.0 to 392 MeV, and electrons with kinetic energies greater than or equal to 2.0 MeV. Since solar protons and alpha particles in these energy ranges accelerated in solar flares can reach the vicinity of Earth, they pose a hazard to manned space flight and to high-altitude aircraft. They can as well significantly affect the high-latitude ionosphere.

X-RAY DETECTOR

Ion chamber detectors provide whole Sun fluxes for the 0.5-to-4 and 1-to-8 Angstrom X-ray wavelength bands. These observations furnish a sensitive means of detecting the start of solar flares and thereby changes in the dayside ionosphere.

Address your inquiries to Mrs. Viola Miller, National Geophysical Data Center, NOAA code D631, 325 Broadway, Boulder, Colorado 80303, USA (Telephone (303) 497-6136, FTS 320-6136).

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